DOCUMENT RESUME

ED 338 808 CE 059 277

TITLE Computer Concepts and Software Applications. Teacher's Guide.

INSTITUTION Illinois State Board of Education, Springfield. Dept. of Adult, Vocational and Technical Education.

PUB DATE 89

NOTE 451p.; For related documents, see CE 059 275-279.

PUB TYPE Guides - Classroom Use - Teaching Guides (For Teacher) (052)

EDRS PRICE MF01/PC19 Plus Postage.

DESCRIPTORS *Business Education; Computer Graphics; *Computer Science Education; *Computer Software; High Schools; Learning Activities; Lesson Plans; *Microcomputers; State Curriculum Guides; Teaching Guides; Telecommunications; *Word Processing

IDENTIFIERS Illinois

ABSTRACT

This curriculum guide is one of five developed as part of the Illinois Plan for Business, Marketing, and Management Education for use in 9th and 10th grades. The curriculum guide includes teacher and student activities that can be implemented in many ways. Information on how to integrate the activity objectives of the Illinois Plan into the State Learning Goals also is included. A model for the curriculum is presented that suggests areas and grade levels of study. A plan for implementing the course for one semester or two semesters is provided, along with lists of 4 audiovisual materials; 32 journal articles; 66 books, workbooks, and supplemental materials; 90 software packages and related books (annotated); 7 other resources; and 42 teacher references (annotated). The guide consists of nine units that cover the following: the computer and its capabilities; hardware and software concepts; getting ready for computer software applications; word processing applications; spreadsheet applications; database applications; integrated applications; graphics applications; and telecommunications. Each unit includes an overview, a topical outline, unit objectives, and suggested student activities with suggestions for evaluation. Two appendixes consist of plans for integration of instructional activities to state learning goals; and a crosswalk of instructional activities to generalizable skills, transition skills, vocational ethics skills, and state learning goals. (KC)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

IL89CDID

Computer Concepts and Software Applications

Illinois State Board of Education

Adult Vocational and Technical Education

TEACHER'S GUIDE

ED338808

CJC
CRAFTS
INCOM
STATEMEN
BALANCE TAXES
PROFIT MARGINS
INTEREST RATES

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it

☐ Minor changes have been made to improve reproduction quality

● Points of view or opinions stated in this document do not necessarily represent official OERI position or policy

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

OEC5-9277

BEST COPY AVAILABLE

COMPUTER CONCEPTS AND SOFTWARE APPLICATIONS

Teacher's Guide

prepared for the
Illinois Plan for Business, Marketing
and Management Education, Grades 9-10
directed by Dr. John H. Rich

Illinois State Board of Education
Department of Adult, Vocational
and Technical Education
Springfield, Illinois

CONTRIBUTORS

ILLINOIS STATE BOARD OF EDUCATION (ISBE), DEPARTMENT OF ADULT, VOCATIONAL AND TECHNICAL EDUCATION (DAVTE) PERSONNEL

Fran Boyd-Beauman
Nona Denton
Gerry Gaedtka
Sandy Mercer
Kathleen Nicholson-Tosh
Jerry Ohare
Joe Turek
Roger Uhe

CONSULTANTS

Charlotte Carr	Illinois State University Normal, Illinois
William Coady	Wabash and Ohio Valley Special Education District Norris City, Illinois
Harry Daniels	Southern Illinois University Carbondale, Illinois
Joseph Karmos	Southern Illinois University Carbondale, Illinois
Franzie Loepp	Illinois State University Normal, Illinois
Pamela Miller	Southern Illinois University Carbondale, Illinois

PROJECT STAFF

*John Rich, Director	Illinois State University Normal, Illinois
Patsy Dickey-Olson	Western Illinois University Macomb, Illinois
*Thomas Elliott	Eastern Illinois University Charleston, Illinois
David Graf	Northern Illinois University DeKalb, Illinois
Lillian Greathouse	Eastern Illinois University Charleston, Illinois
Edward Harris	Northern Illinois University DeKalb, Illinois

*Board of Directors

Thomas Haynes	Illinois State University Normal, Illinois
Alfred L. Kaisershot	Illinois State University Normal, Illinois
Heidi Perreault	Southern Illinois University Carbondale, Illinois
John Schrage	Southern Illinois University Edwardsville, Illinois
*Betty Schroeder	Northern Illinois University DeKalb, Illinois
Robert Schultheis	Southern Illinois University Edwardsville, Illinois
Robert Sullivan (deceased)	Eastern Illinois University Charleston, Illinois
Ronald Vaughn	Western Illinois University Macomb, Illinois
F. Stanford Wayne	Northern Illinois University DeKalb, Illinois
Marilyn Wilkins	Eastern Illinois University Charleston, Illinois
Ralph Wray	Illinois State University Normal, Illinois

SECONDARY AND POST-SECONDARY EDUCATORS' ADVISORY COUNCIL

Don Ballinger	Chicago Public Schools Chicago, Illinois
Jerry Bober	Formerly with Chicago Public Schools Chicago, Illinois
Fran Brady	East Leyden High School Franklin Park, Illinois
Sharon Broers	LaSalle-Peru Area Vocational Center LaSalle, Illinois
Jerry Cherichetti	Rockford Area Career Center Rockford, Illinois
Jalee Cox	Lakeland College Mattoon, Illinois
Beth Cuyler	Stephenson Area Career Center Freeport, Illinois
Steve Davis	Stephen Decatur High School Decatur, Illinois
Sharon Fisher-Larson	Elgin Community College Elgin, Illinois
Dale Genseal	Lockport Central High School Lockport, Illinois
Carolyn Godby	Pekin Area Vocational Center Pekin, Illinois
Debbie Hanley	Coal City Middle School Coal City, Illinois

Delores Harriss	Beck Area Vocational Center Red Bud, Illinois
Barbara High	Savanna Park District Savanna, Illinois
Larry Hinkle	Danville Area Community College Danville, Illinois
Ethel Holladay	DuQuoin High School DuQuoin, Illinois
Lori Johnson	Naperville Central High School Naperville, Illinois
Diane Kruger	Kaskaskia College Centralia, Illinois
Horace D. Marvel	Quincy Area Vocational Technical Center Quincy, Illinois
Mary Ann McDonald	Tri-County Education Service Center Channahon, Illinois
Janice Owens	Kishwaukee College Malta, Illinois
Ethel Pichon	Vermilion Occupational Technical Education Center Danville, Illinois
Rhonda Plaeger	Havana High School Havana, Illinois
Demetra Polites (retired)	Manual High School Peoria, Illinois
Ray J. Potthast	Collinsville Area Vocational Center Collinsville, Illinois
James Price	Mt. Zion High School Mt. Zion, Illinois
Judy Rann	Harrisburg High School Harrisburg, Illinois
Jan Robinson	Lake County Area Vocational Center Grayslake, Illinois
George Salovich	Edwardsville High School Edwardsville, Illinois
Sherry Sauder	Illinois Central College East Peoria, Illinois
Tony Smerko	Rockford East High School Rockford, Illinois
Pat Sullivan	Whiteside Area Vocational Center Sterling, Illinois
Sharon Vinson	Rockford Area Career Center Rockford, Illinois
Vera Wood	Belleville West High School Belleville, Illinois

INDUSTRY ADVISORY COUNCIL

Larry Carens	Central Business Machines Chicago, Illinois
Ruth Christ	Fermi National Accelerator Lab Batavia, Illinois
Pam Clay-Turley	GTE Training Center Bloomington, Illinois
Jerry Elsner	Laura Lee Elsner Candies Clarendon Hills, Illinois
Phyllis Graff	LaSalle Manufacturing and Machine Company LaSalle, Illinois
Gene Gudeman	The Peoples Bank Normal, Illinois
Jean Honeyman	Illinois State Board of Education Springfield, Illinois
Roy Kurkowski	Retail Sales and Service LaSalle, Illinois
Rita Martinkus	LaSalle-Peru Area Vocational Center LaSalle, Illinois
John Ringer	State Farm Insurance Company Bloomington, Illinois
John Ryan	Country Companies Bloomington, Illinois

CURRICULUM GUIDE AUTHORS

Kathy Bellott	Wenona High School Wenona, Illinois
Kathy Bennett	Melvin-Sibley High School Melvin, Illinois
Nancy Bradley	Bethalto Senior High School Bethalto, Illinois
Fran Brady	East Leyden High School Franklin Park, Illinois
Judy Brucker	Seneca High School Seneca, Illinois
Karen Buchler	College of DuPage Glen Ellyn, Illinois
Linda Chapman	Central High School Burlington, Illinois
Jean Coveleski	Belleville East High School Belleville, Illinois
Steve Davis	Stephen Decatur High School Decatur, Illinois
David Dion	Hamilton High School Hamilton, Illinois
Gerva Dunlap	Alton Senior High School Alton, Illinois

Jeffery Fitzpatrick	Graduate Assistant Illinois State University Normal, Illinois
George Gasparich	Belleville West High School Belleville, Illinois
Richard Gordon	Bloomington High School Bloomington, Illinois
Ann Hittle	Hinsdale Central High School Hinsdale, Illinois
Marjorie Hudson	Carbondale High School Carbondale, Illinois
Charles Jones	Belleville East High School Belleville, Illinois
Paul Juriga	Stephen Decatur High School Decatur, Illinois
Joyce Kroll	Jo Daviess Area Vocational Center Elizabeth, Illinois
Trudy Lingle	Carbondale High School Carbondale, Illinois
Jane Lockett	Arcola High School Arcola, Illinois
George Lowen	Graduate Assistant Illinois State University Normal, Illinois
Linda Mack	Saybrook-Arrowsmith High School Saybrook, Illinois
John Majernik	Belvidere High School Belvidere, Illinois
Dorothy McConachie	Red Bud High School Red Bud, Illinois
Janice Ochs	Teutopolis High School Teutopolis, Illinois
Sandy Ohren	Alton Senior High School Alton, Illinois
Glenn Philpott	Belleville West High School Belleville, Illinois
Norris Porter	University High School Normal, Illinois
Sue Rucks	Hoffman Estates High School Hoffman Estates, Illinois
Frances Staniec	Notre Dame High School Chicago, Illinois
Amy Stutzki	Tri-Point High School Cullom, Illinois
Kris Tarbert	Winnebago High School Winnebago, Illinois
Jill Warren	Limestone High School Bartonville, Illinois
James Wolford	Joliet Junior College Joliet, Illinois

Tonya Wolford	Joliet Junior College Joliet, Illinois

FIELD-TEST PERSONNEL

Eula Anderson	Orr High School Chicago, Illinois
Linda Belford	Pittsfield High School Pittsfield, Illinos
Charlotte Bell	Orr High School Chicago, Illinois
Kathy Bellott	Wenona High School Wenona, Illinois
Jelaine Binford	Curie High School Chicago, Illinois
Yolanda Blake	Clemente High School Chicago, Illinois
Fran Brady	East Leyden High School Franklin Park, Illinois
Judy Brucker	Seneca High School Seneca, Illinois
Forrest Buck	Ottawa High School Ottawa, Illinois
Ruby Davis	Curie High School Chicago, Illinois
Steve Davis	Stephen Decatur High School Decatur, Illinois
Diane DeWitt	Freeport High School Freeport, Illinois
Joan Dollinger	Waubonsee Valley High School Aurora, Illinois
George Gasparich	Belleville West High School Belleville, Illinois
SanDee Graham	Chiddix Junior High School Normal, Illinois
Sandra Gustafson	Sycamore High School Sycamore, Illinois
Larry Heavilin	LeRoy High School LeRoy, Illinois
Carol Hoffman	Prairie Central High School Fairbury, Illinois
Gerald James	Orr High School Chicago, Illinois
Michael Keys	Reed-Custer High School Braidwood, Illinois
James Kleindl	Freeport High School Freeport, Illinois
Suzanne Lee	Freeport High School Freeport, Illinois

Gerre Nadig	Clemente High School Chicago, Illinois
Shelley Norris	Normal Community High School Normal, Illinois
John Pehle	Lincoln-Way High School New Lenox, Illinois
Judy Rann	Harrisburg High School Harrisburg, Illinois
Grace Reichert	Ottawa High School Ottawa, Illinois
Mary Shannon	Curie High School Chicago, Illinois
Kay Thoman	Aurora East High School Aurora, Illinois
Clarence Williams	Orr High School Chicago, Illinois

STUDENT LEARNING OBJECTIVE FACE VALIDITY COMMITTEE

Kathy Bennett	Melvin-Sibley High School Melvin, Illinois
E. Kay Berry	Lexington High School Lexington, Illinois
Barbara Blunk	University High School Normal, Illinois
David Dion	Hamilton High School Hamilton, Illinois
Jean Finefield	Richwoods High School Peoria, Illinois
Peggy Gross	Limestone High School Bartonville, Illinois
Mary Lou Hott	Limestone High School Bartonville, Illinois
Linda Lambert	Pontiac High School Pontiac, Illinois
Nancy Lambert	Normal Community High School Normal, Illinois
Linda Mack	Saybrook-Arrowsmith High School Saybrook, Illinois
Beth Mascal	Streator High School Streator, Illinois
Scott Repplinger	Morton High School Morton, Illinois
Joy Reutter	Limestone High School Bartonville, Illinois
Ed Steinbeck	Eureka High School Eureka, Illinois
Pam Venturi	Woodruff High School Peoria, Illinois

Jill Warren	Limestone High School Bartonville, Illinois

EDITORS

Beth Ann Guyer	Illinois State University Normal, Illinois
Alfred L. Kaisershot	Illinois State University Normal, Illinois
Joan Rich	Normal, Illinois

PROJECT SECTRETARY

Patricia A. Johnson	Normal, Illinois

PREFACE

This curriculum guide is one of five developed as part of the Illinois Plan for Business, Marketing and Management Education for use at the orientation level (typically the 9th and 10th grades).

A teacher's guide and a companion student activities packet are available for:

Business and Technology Concepts
Business and Technology Concepts/Business Communications
Business and Technology Concepts/Business Computations
Keyboarding, Typewriting and Formatting
Computer Concepts and Software Applications

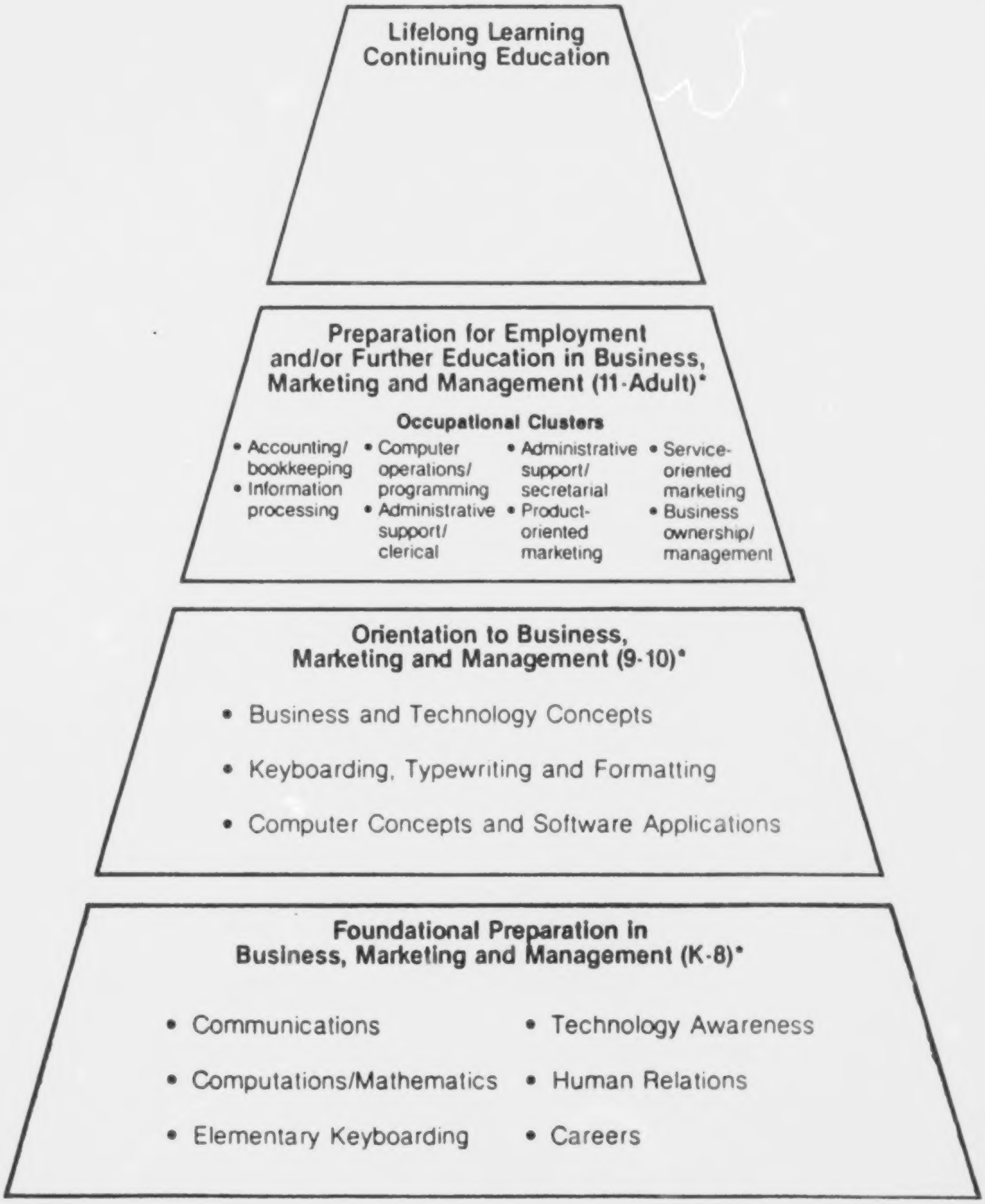
Each curriculum guide includes a wide variety of teacher and student activities which provide extensive flexibility for implementation. Information on how to integrate the activity objectives of the Illinois Plan for Business, Marketing and Management into the State Learning Goals is also included.

The Illinois Model for Business, Marketing and Management Education is presented on the following page. This model presents the suggested areas and grade levels of study.

The Illinois State Board of Education is committed to assisting Education for Employment Regional Systems in the development of quality vocational education programs. The activities outlined in this product have been designed to prepare persons for employment and/or further education in the field of business, marketing and management occupations.

Sincere appreciation is extended to the vocational educators and business and industry representatives who assisted in the development and field-testing of this curriculum.

The Illinois Model for Business, Marketing and Management Education



Lifelong Learning
Continuing Education

Preparation for Employment and/or Further Education in Business, Marketing and Management (11-Adult)*

Occupational Clusters

- Accounting/bookkeeping
- Information processing
- Computer operations/programming
- Administrative support/clerical
- Administrative support/secretarial
- Product-oriented marketing
- Service-oriented marketing
- Business ownership/management

Orientation to Business, Marketing and Management (9-10)*

- Business and Technology Concepts
- Keyboarding, Typewriting and Formatting
- Computer Concepts and Software Applications

Foundational Preparation in Business, Marketing and Management (K-8)*

- Communications
- Computations/Mathematics
- Elementary Keyboarding
- Technology Awareness
- Human Relations
- Careers

*Suggested Grade Levels

TABLE OF CONTENTS

CONTRIBUTORS iii

PREFACE xi

INTRODUCTION
- Introduction 1
- Course Resources 1
- Teacher References 21
- Instructional Plan 28
- Glossary 37

UNIT A: THE COMPUTER AND ITS CAPABILITIES
- Unit Plan 41
- Suggested Student Activities
  - A-1: Value of Computers Discussion 44
  - A-2: Value of Computers Interview 47
  - A-3: Value of Computers Small Group Discussion 49
  - A-4: Status of Computers Report 50
  - A-5: Theme on Future 52
  - A-6: Status and Uses of Computers Discussion 54
  - A-7: Common Computer Terminology Word Search 55
  - A-8: Common Computer Terminology 58
  - A-9: Common Computer Terminology Crossword Puzzle 62
  - A-10: Computer Careers and Training Poster 67
  - A-11: Computer Careers and Training Report 69
  - A-12: Computer Careers and Training Comparison 72
  - A-13: Information Processing Cycle Introduction 76
  - A-14: Information Processing Cycle Matching Questions 79
  - A-15: Microcomputers Poster 86
  - A-16: Microcomputer Components 88
  - A-17: Microcomputer Demonstration 93
  - A-18: Buying a Microcomputer Case Problem 96
  - A-19: Microcomputers Price Comparisons 98

UNIT B: HARDWARE AND SOFTWARE CONCEPTS
- Unit Plan 100
- Suggested Student Activities
  - B-1: Bits to Data Base Terminology 102
  - B-2: Hierarchy of Data Matching 105
  - B-3: Hierarchy of Data Essay 108
  - B-4: Hierarchy of Data Quiz 110
  - B-5: Central Processing Unit Terminology 113
  - B-6: Central Processing Unit Fill in the Blanks 116
  - B-7: Central Processing Unit Essay 119
  - B-8: Central Processing Unit Crossword Puzzle 121
  - B-9: Devices and Functions Crossword Puzzle 125
  - B-10: Devices and Functions Definitions and Illustrations 129

B-11: Devices and Functions Fill in the Blanks 131
B-12: Devices and Functions Essay Questions 134
B-13: Hardware Terminology 136
B-14: Hardware Crossword Puzzle 141
B-15: Hardware Fill in the Blanks 145
B-16: Hardware Essay 150
B-17: Software Definitions 152
B-18: Software Quiz 157
B-19: Software Crossword Puzzle 160
B-20: Software Essay 164
B-21: Field Trip to Computer Store 166
B-22: Computer Magazine Information About Hardware 168
B-23: Sources of Information About Hardware 170
B-24: Computer Hardware Guest Speaker 172
B-25: Field Trip Report About Software 173
B-26: Computer Club Information About Software 175
B-27: Public Domain Software Information 177
B-28: Future Trends in Hardware and Software 179
B-29: Future Trends Essay 182
B-30: Trends: Yesterday and Today in Hardware and Software 184
B-31: Future Trends Crossword Puzzle 186

UNIT C: GETTING READY FOR COMPUTER SOFTWARE APPLICATIONS

Unit Plan 190

Suggested Student Activities

C-1: Getting the Computer Ready and Loading the Application Software 191
C-2: Initializing or Formatting Blank Disks 195

UNIT D: WORD PROCESSING APPLICATIONS

Unit Plan 197

Suggested Student Activities

D-1: Understanding Word Processing 199
D-2: Margin and Tab Settings 200
D-3: Setting Line Spacing 204
D-4: Centering and Justifying Margins 208
D-5: Finding and Replacing a Letter, Word or Sentence 211
D-6: Deleting a Letter, Word, Sentence and Paragraph 215
D-7: Inserting a Letter, Word, Sentence or Paragraph 221
D-8: Moving a Word, Sentence or Paragraph Within a Document 225
D-9: Moving a Sentence or Paragraph or Merging Documents 229
D-10: Formatting a Short Report 233
D-11: Formatting Reports with Footers, Headers, Superscripts and Subscripts 236
D-12: Formatting Labels and Envelopes 240
D-13: Using a Spelling Check 242

UNIT E: SPREADSHEET APPLICATIONS

Unit Plan 245

Suggested Student Activities

- E-1: Understanding Spreadsheets 247
- E-2: Practical Uses of a Spreadsheet 250
- E-3: Basic Functions of the Spreadsheet 253
- E-4: Getting Ready to Use a Spreadsheet 256
- E-5: Spreadsheet Prompts, Spreadsheet Moving 257
- E-6: Using Labels, Values and Formulae 259
- E-7: Spreadsheet and Storage Commands 262
- E-8: Editing a Spreadsheet 265
- E-9: Formatting a Spreadsheet 268
- E-10: Finding Information on the Spreadsheet 271
- E-11: Solving Business Problems 273
- E-12: Creating Graphs 275
- E-13: Printing a Spreadsheet 278
- E-14: Using Advanced Functions 281

UNIT F: DATA BASE APPLICATIONS

Unit Plan 284

Suggested Student Activities

- F-1: Understanding a Data Base 286
- F-2: Computer Screen with Data Base Software Package 290
- F-3: Data Base Terminology 292
- F-4: Data Base Software Application Packages 296
- F-5: Booting the Data Base Software Package 299
- F-6: Practical Uses of a Data Base 302
- F-7: Entering Data to the Data Base 304
- F-8: Basic Functions of a Data Base 307
- F-9: Save, Clear and Load for Data Base 311
- F-10: Data Base Assignments 312
- F-11: Group Project 314
- F-12: Group Project Questions 316
- F-13: Displaying a Data Base 318
- F-14: Printing a Data Base 319
- F-15: Editing a Data Base 320
- F-16: What Are You Looking For? 321
- F-17: Sorting Files 323
- F-18: Prospect List in Order 325
- F-19: What Are You Looking For? 328
- F-20: Merging a Data Base with Other Applications 331

UNIT G: INTEGRATED APPLICATIONS

Unit Plan 333

Suggested Student Activities

- G-1: Integrating Word Processing and Data Base 334
- G-2: Integrating Word Processing and Spreadsheets 338
- G-3: Integrating Word Processing, Spreadsheet and Data Base 342

UNIT H: GRAPHICS APPLICATIONS

Unit Plan 344

Suggested Student Activities

H-1: Understanding Computer Graphics 345

H-2: Identifying the Parts of a Graph 347

H-3: Create, Edit and Print a Line Graph 354

H-4: Create, Edit and Print a Bar Graph 358

H-5: Create, Edit and Print a Pie Graph 362

UNIT I:: TELECOMMUNICATIONS

Unit Plan 366

Suggested Student Activities

I-1: Understanding Telecommunications 368

I-2: Telecommunications Terminology 369

I-3: Networking 370

I-4: Bulletin Boards: Definition and Access 372

I-5: Simulation with Telecommunication Concepts 374

APPENDIX A: INTEGRATION OF INSTRUCTIONAL ACTIVITIES TO STATE LEARNING GOALS 376

APPENDIX B: CROSSWALK OF INSTRUCTIONAL ACTIVITIES TO GENERALIZABLE SKILLS, TRANSITION SKILLS, VOCATIONAL ETHICS SKILLS AND STATE LEARNING GOALS 419

COMPUTER CONCEPTS AND SOFTWARE APPLICATIONS

INTRODUCTION

Course Overview

Computer Concepts and Software Applications is intended to be either a one-semester or a one-year course designed for students enrolled in ninth or tenth grades. The purpose of the course is to acquaint students with the computer and the ways in which it serves business. The use of computer power for basic business applications in word processing, spreadsheet, data base, graphics and telecommunications is emphasized in the learning activities included in this curriculum guide.

Courses offered at the eleventh- and twelfth-grade level will extend the ability of students to use these types of applications. In this course the primary focus is to make students aware of the utilization of the computer to perform specific business functions.

Course Description

The development of computer concepts and the use of software applications for skill development will help students explore the ways the computer is used in business and society. Students will study computer terminology and learn to use a variety of software applications. Word processing, spreadsheets and data base applications will be integral parts of the content. Optional applications include graphics and telecommunications applications.

COURSE RESOURCES

Audio-Visual Materials

Concepts of Data Processing. Bronx: MPC Educational Publishers.

Concepts of Word Processing. Bronx: MPC Educational Publishers.

Cox, Rollie and Harry R. Moon. Electronic Mail. Bronx: MPC Educational Publishers.

IA Associates. Computer Visions: A Video Excursion into the World of Computers. Cincinnati: South-Western Publishing Company.

Periodical Articles

"Bell Breakup Has a Positive Effect on Telecommunications." The Office, May 1987, pp. 50+.

Beltz, Anne, et. al. "Telecommunications in the New Environment," The Office, April 1985, pp. 136+.

Bocchicchio, Lucille. "Selecting the PC Package That Does What is Needed," Office Systems, March 1985, pp. 24+.

Boggs, Raymond L. "Greater Responsibilities for Electronic Typewriters," The Office, May 1987, pp. 86+.

Coggshall, William. "Integrated Software: New Power for OA," Modern Office Technology, April 1985, pp. 51+.

"Compatibility is the Keystone to Link WP and OA." Office Systems, July 1985, pp. 58+.

Cooper, Deborah S. "Word Processing Trends in the Automated Office," The Office, May 1987, pp. 70+.

"Data Processing: Fitting It All Together." Modern Office Technology. January 1987, pp. 60+.

Eddison, Elizabeth B. "There's a Software Package for Just About Everything," Office Systems, February 1985, pp. 30+.

Feingold, S. Norman. "Emerging Careers: Occupations for Post-Industrial Society," The Futurist, February 1984, pp. 9-16.

Hart, Roger. "It's Time to Put Your PC into a Color-Graphics Mode," Office Systems, February 1986, pp. 25+.

Hohenstein, C. Louis. "Quick Guide to Using PC Spreadsheets," Administrative Management, November 1985, pp. 38+.

"The Information Evolution: Business Management Software." Barron's, October 14, 1985, pp. 64-72.

Kreitman, Larry. "Teleconferencing: A Structured, Interactive, Electronic Meeting Between Two or More Persons in Separate Locations," The Secretary, November-December 1986, pp. 23+.

Krema, James F. "Personal Computers and the Matter of Security," The Office, August 1986, pp 60+.

Lechner, Herbert D., Michael S. Allen, Steven Milunovic and Donn Parker. "Networking," Fortune, November 10, 1986. (advertised insert).

Lu, Cary. "Integrated Software Bids for Center Stage," High Technology, November 1984, pp. 32+.

McInnis, Noel, et. al. "Networking: A Global Communications Tool," The Office, June 1985, pp. 9+.

Meth, Clifford. "The Write Stuff," Administrative Management, May 1986, pp. 43+.

Mortensen, Erik. "One World--One Network," Administrative Management, June 1986, pp. 39+.

Orazine, Ron. "Choosing the Right Telecommunications System for Your Office," Administrative Management, April 1986, pp. 39+.

Roller, Robert. "The WP Heritage--A Strategic Link in OA," Words, June-July 1985, pp. 30+.

Saunders, John O. "The Expanding Role of PCs for Business Applications," Office Systems, March 1985, pp. 100+.

Settanni, Joseph Andrew, CRM. "Mighty Microcomputer: A Small System Powerhouse," Office Systems, September 1986, pp. 57+.

Settanni, Joseph Andrew, CRM. "Voice & Data Merging in Telecommunications," Office Systems, May 1987, pp. 48+.

Seymour, Jim. "Integrating Software: How Tight is the Bond?" Today's Office, September 1985, pp. 19+.

Unley, Shirley. "Survey Highlights WP Use & Systems," Office Systems, January 1987, pp. 58+.

Wallach, Wendell. "The Computer's Role in Human Relations," Office Systems, August 1986, pp. 24+.

Wallach, Wendell. "The PC of the Future is Nearer Than You Think," Office Systems, April 1986, pp. 35+.

Winsor, William M. "Integrating Office Resources: People and Technology," The Secretary, April 1987, pp. 22+.

Yaremko, James. "Database Planning is Not Just Choosing a Package," The Office, May 1987, pp. 46+.

Yonda, Marge, CDP. "How to Get in Step with the Right Computer," *Office Systems*, September 1986, pp. 90+.

Books, Workbooks and Supplemental Materials

Accounting with the Microcomputer. Bronx: MPC Educational Publishers, 1986.

Alberte-Hallam, Teresa, Stephen F. Hallam and James Hallam. *Microcomputer Use: Word Processors, Spreadsheets, and Data Bases*. Orlando: Academic Press, Inc., 1985.

Anderson, J. Michael. *WordStar for the Computer-Intimidated*. Englewood Cliffs: Prentice-Hall, Inc., 1985.

Arntson, L. Joyce. *Word/Information Processing: Concepts, Procedures, and Systems*. Boston: Kent Publishing Co., 1983.

Arntson, L. Joyce and Lora Brunello Todesco. *Word/Information Processing: Exercises, Applications, and Procedures*. Boston: Kent Publishing Co., 1987.

Awad, Elias M. *Introduction to Computers*. Englewood Cliffs: Prentice-Hall, Inc., 1983. (paperback)

Baber, Lina Grace. *Word/Information Processing: Concepts and Applications*. Columbus: Charles E. Merrill Publishing Co., 1984. (paperback)

Behling, Robert. *Computers and Information Processing*. Boston: Kent Publishing Co., 1986.

Bergerud, Marly and Jean Gonzalez. *Word and Information Processing*, 3d ed. New York: John Wiley & Sons, Inc., 1987.

Bergerud, Marly and Jean Gonzalez. *Word Processing: Concepts and Careers*, 4th ed. New York: John Wiley & Sons, Inc., 1988.

Blyth, W. John and Mary M. Blyth. *Telecommunications: Concepts, Development, and Management*. Indianapolis: Bobbs-Merrill Publishing, 1985.

Brooks, Lloyd. *Consultamation, Inc., Word Processing Practice & Applications*. New York: McGraw-Hill, 1983.

Busche, Don. *Microcomputer Business Applications and Projects*. New York: John Wiley & Sons, Inc., 1987.

Bux, William E. *Data Entry Activities for the Microcomputer*, 2d ed. Cincinnati: South-Western Publishing Co., 1988.

Bux and Clark. *Data Entry Activities for the Microcomputer*. Cincinnati: South-Western Publishing Co.

Casady, Mona J. *Word Information Processing Concepts*. Cincinnati: South-Western Publishing Co., 1984.

Casady, Mona J. and Dorothy C. Sandburg. *Word/Information Processing: A System Approach*. Cincinnati: South-Western Publishing Co., 1985.

Cassell, Don. *WordStar Simplified with WordStar 3.3, MailMerge, SpellStar, and StarIndex*. Englewood Cliffs: Prentice-Hall, Inc., 1985.

Clark, James F. and Judith J. Lambrecht. *Information Processing: Concepts, Principles and Procedures*. Cincinnati: South-Western Publishing Co., 1985.

Clark, James F. and Judith J. Lambrecht. *Information Processing: Concepts, Principles and Procedures Study Guides and Applications*. Cincinnati: South-Western Publishing Co., 1985.

Clark, James F. and Kathy Brittain White. *Computer Confidence: A Challenge for Today*. Cincinnati: South-Western Publishing Co., 1986.

Clark, James F. and Kathy Brittain White. *Computer Confidence: A Challenge for Today Study Guides and Applications*. Cincinnati: South-Western Publishing Co., 1986.

Clayton, Dean and O. D. Park, *APPLEWORKS Integrated Applications for Microcomputers*. Cincinnati: South-Western Publishing Co., 1987.

Close and Hite. *Spreadsheets: Principles and Applications Using VisiCalc*. Cincinnati: South-Western Publishing Co.

Daggett, Willard R., Kamiran S. Badrkhan and Benedict Kruse. *Computers and Information Technology*. Cincinnati: South-Western Publishing Co., 1985.

Dreger, Carol Holcomb. *The Document Book: Integrated Practice Materials for Word Processing Systems*. Chicago: Science Research Associates, Inc., 1987.

Drum, William O. *Database Applications*. Cincinnati: South-Western Publishing Co., 1986.

Elia, L. and J. Fall. Word Processing with SUPERSCRIPT and the TRS80. Bronx: MPC Educational Publishers.

Finn, Nancy B. The Electronic Office. Englewood Cliffs: Prentice-Hall, Inc., 1983. (paperback)

Garrison, Catherine, Mercedes A. McGower and Marilyn K. Popyk. WordStar: A Ready Reference Manual. Reading: Addison-Wesley Publishing Company, Inc., 1987.

Goldstein. Microcomputer Applications: A Hands-On Approach to Problem Solving, instructor's manual and disk, test bank, transparency masters, text and GoldWord and GoldSpread. Reading: Addison-Wesley Publishing Company.

Graham, Sally. The MultiMate Advantage: A Practical Approach. Cincinnati: South-Western Publishing Co., 1987.

Graham, Sally. Working Your Way Through WORDSTAR. Cincinnati: South-Western Publishing Co., 1985.

Greenwood, Frank and Mary Greenwood. Office Technology: Principles of Automation. Reston: Reston Publishing Co., Inc. 1984.

Groneman, Nancy. Applications: Using the Personal Computer. Cincinnati: South-Western Publishing, Co., 1988.

Hearn, Donald and Pauline M. Baker. Computer Graphics for the IBM Personal Computer. Englewood Cliffs: Prentice-Hall, Inc., 1983.

Hearn, Donald and Pauline M. Baker. Microcomputer Graphics: Techniques and Applications. Englewood Cliffs: Prentice-Hall, Inc., 1983.

Layman, Katie and Adrienne Renner. Learn Apple Writer IIe the Easy Way. Englewood Cliffs: Prentice-Hall, Inc., 1985.

Lucas, Henry C., Jr. Introduction to Computers and Information Systems. New York: MacMillan Publishing Company, 1986.

Meroney. Word Processing Applications in Practice. Cincinnati: South-Western Publishing Co.

Neibauer, Alan R. Applications in Word and Information Processing. New York: Delmar Publishers Inc., 1985.

Olinzock, Anthony A. and Otto Santos, Jr. Microcomputer Activities for Office Procedures. Cincinnati: South-Western Publishing Co., Inc., 1984.

Pick, James B. Computer Systems in Business: Introduction. Boston: PWS Computer Science, 1986.

Popyk, Marilyn K. Up and Running! Microcomputer Applications, instructor's manual, test bank, and transparency masters. Reading: Addison-Wesley Publishing Co.

Puotinen, C. J. The Last Word on WordStar. New York: Holt, Rinehart and Winston, 1983. (paperback)

Quible, Zane K. and Margaret H. Johnson. Introduction to Word/Information Processing, 2nd ed. Reston: Reston Publishing Co., Inc., 1985.

Rodda, Linda J. Managing Information in the Electronic Office. Reston: Reston Publishing Co., Inc., 1985.

Rosen, Arnold and Rosemary Fielden. Word Processing, 2nd ed. Englewood Cliffs: Prentice-Hall, Inc., 1985.

Rosen, Arnold and William. Word Processing: Keyboarding Applications and Exercises. New York: John Wiley & Sons, Inc., 1987.

Ruby, Ralph, Jr. and Robert W. Mooney. Word Processing Applications for Microcomputers. Chicago: Science Research Associates, Inc., 1987.

Sabin, William A. The Gregg Reference Manual, 6th ed., New York: Gregg/McGraw-Hill, 1985.

Segal, Hillel and Jesse Berst. How to Select Your Small Computer Without Frustration: Association of Computer Users' Computer Fitness, Vol. I. Englewood Hills: Prentice-Hall, Inc., 1983.

Seraydarian, Patricia. Word Processing Applications for Electronic Typewriters. Boston: Houghton Mifflin Company, 1983.

Shelly, Gary B. and Thomas J. Cashman. Computer Fundamentals with Application Software. Boston: Boyd & Fraser Publishing Co., 1986.

Shelly, Gary B. and Thomas J. Cashman. Computer Fundamentals for an Information Age. Brea: Anaheim Publishing Co., Inc., 1984.

Silver, Gerald A. and Myrna L. Silver. Computers & Information Processing. New York: Harper & Row Publishers, 1986.

Skeans, Carolou and Ann Hern. Advanced Information Processing Applications. Reston: Reston Publishing Co., Inc., 1984.

Smith, Gaylord N. *Lotus 1-2-3 QUICK*. Cincinnati: South-Western Publishing Co., 1986.

Smith, Harold T. *The Office Revolution: Strategies for Managing Tomorrow's Workforce*. Willow Grove: Administrative Management Society Foundation, 1983.

Troop, Jane and Donna Woo. *DisplayWrite 3: A Practical Approach*. Cincinnati: South-Western Publishing Co., 1986.

Varner, Jane Terzick. *Word Processing Operations: Document Preparation*. Chicago: Science Research Associates, Inc., 1982.

Vineyard, Dale and Bill Radcliff. *Word Processing with SuperScripsit: A How-to Manual*. Cincinnati: South-Western Publishing Co., 1988.

Watts, H. James and James F. Clark. *Introduction to AppleWriter Word Processing*. Cincinnati: South-Western Publishing Co., 1984.

Watts, H. James and James F. Clark. *Introduction to Word Processing: AppleWriter II*. Cincinnati: South-Western Publishing Co., 1988.

Wolff, Terris B. *Microcomputer Applications: Using Small Systems Software*. Boston: Boyd & Fraser Publishing Co., 1985.

Wood, Merle. *Computer Awareness*. Cincinnati: South-Western Publishing Co.

Software and Documentation

References in this section preceded by an asterisk (*) are available from the Illinois Vocational Curriculum Center which collects two types of software: one which is circulating and available for demonstration in the Center and one which is available only for demonstration. *Demonstration software may be previewed only at the Center*. Disks are loaned for 30 days unless otherwise stated. For more information contact Jeff Lake, Microcomputer Specialist, Illinois Vocational Curriculum Center, Sangamon State University, F-2, Springfield, IL 62708 (217/786-6375 or toll free in Illinois 800/252-IVCC). Please call in advance if you are planning to preview software at the Center. Hours are 8:00 a.m. to 4:30 p.m., Monday through Friday.

Accounting: Systems and Procedures, Application Disk and Computerized Practice Sets for AppleII+, IIe, IIc and IBM PC. Manchester: McGraw-Hill, 1988.

Allen, Warren W. Accounting Tutorial. Cincinnati: South-Western Publishing Co.

* Apple Bulletin Board System (A.B.B.S.). Apple II. Software Sorcery, Inc., 7927 Jones Branch Dr., Suite 400, McLean, VA 22102. 1981. DEMO. DI 651.84404 SOFT 1981-1-2.
Two disks: Disk 1 (Version 4.0), Disk 2 (All Modules); and ABBS System Operator's Manual. With this message storage and retrieval program and the necessary hardware, the Apple can answer incoming calls and converse with voice-grade telephone line. The messages that are received are stored on the disk system and can be readily used by callers.

* Apple Post: Mailing List System. Apple. Apple Computer, Inc. 20525 Mariani Ave., Cupertino, CA 95014. 1979. DEMO. DI 651.4 SOFT 1979-1.
Includes 1 disk and documentation: By Software Works, Inc. $50 (Out-of-Print). Designed to enter and retrieve names and addresses, edit and print lists and mailing labels. Special searching routines let Apple Post find names that were misspelled when they were entered into the system and find addresses that are in geographic proximity. Can accommodate up to six disk drives connected to the Apple.

* Apple Writer II. Apple IIe only. Apple Computer Inc., 10260 Bandley Dr., Cupertino, CA 95014. 1982. $195. DEMO. DI 651.4 APPL 1982-1.
Includes 1 disk, Apple Writer II Manual and WPL manual: Requires Disk II drive with controller and compatible printer and interface card. Word Processing program shows how to create, edit and print all types of documents quickly and inexpensively. Easily performs every editing task, from correcting typographical errors to moving whole paragraphs.

* Atkinson, James O. Personal Accounting and Functions of Money. TRS-80 Model III or IV. Computer Services, P.O. Box 702, Fairmont, NC 28340. 1984. $100 and $50. DEMO. DI 640.73 ATKI 1984-1.
Includes 2 disks and documentation for both programs: Samples of two programs, Personal Accounting and Functions of Money, allows the user to develop a personal accounting system.

* Bank Street Writer. Apple. Broderbund Software, 17 Paul Dr., San Rafael, CA 94903. 1982. $69.95. DEMO. DI651.8 BROD 1982-1.
Includes 1 disk and documentation: An easy word processor to get up and running. This program is especially good for children ages 6 and up and for those wishing to do uncomplicated tasks.

* Braun, Peter, Ph.D. Microlit. Apple. Career Publishing, Inc., P.O. Box 5486, Orange, CA 92667. 1984. $180. DEMO. DI 651.84 BRAU 1984-1.
Includes 1 disk and DEMO Review Kit: This demonstration disk of the MICROLIT computer package is designed as a tool for teaching computer studies. The 4 parts include instructor's guide, teacher's disk, transparency masters and student workbooks.

* Business Computer Network (BCN) Telecommunication System. Kaypro II 4 or 10. The Business Computer Network, 1000 College View Dr., Riverton, WY 82501. 1983. DEMO. DI651.84 BUSI 1983-1.
Includes 1 disk and operator's manual: Release 0.6. Requires extra blank formatted disks, Hayes Smartmodem (300 baud or 1200 baud rate), and printer (optional). This is a telecommunications package for use with Kayrpo Computer and Hayes Smartmodem.

* Business Education Package I. Apple or TRS-80 Model I, III or 4. Micro Learningware, Hwy. 66 S, P.O. Box 307 Mankato, MN 56002-0307. 1980. $45/Apple. $39.95/TRS-80. DEMO, DI 650.1 MICR 1980-1.
Includes disk and documentation: Contains sample programs for loan amortization, stock market simulation, bank reconciliation and depreciation.

* Business Education Package II. TRS-80 Model III or 4. Micro Learningware, Hw. 66 S, P.O. Box 307, Mankato, MN 56002-0307. 1980. $39.95. DEMO. DI 650.1 MICR 1980-2.
Includes 1 disk and general ledger: Package II of a three-package series containing programs for Accounting I, Accounting II, General Ledger and Annuities.

* Business Education Package III. TRS-80 Model III or 4. Micro Learningware, Hwy. 66 S, P.O. Box 307, Mankato, MN 56002-0307. 1980. $39.95. DEMO. DI 650-1 MICR 1980-3.
Includes 1 disk and general ledger: Also available in Apple II, IIe and IBM PC. Package III of a three-package series containing a general ledger accounting system.

* Business Volume I. Apple. Minnesota Educational Computing Consortium (MECC), 2520 Broadway Dr., St. Paul, MN 55113-5199. 1981. $45. DEMO and LOAN. DI 650.1 MINN 1981-1.
Includes 1 disk and support manual: Topics covered by the tutorials and problem-solving programs on the disk are interest on installment buying, effects of simple and compound interest, loan amortization, business financial reports, money supply, payroll and the 1040A tax form. For senior high through adult level.

* Business Volume 2. Apple. Minnesota Educational Computing Consortium (MECC), 2520 Broadway Dr., St. Paul, MN 55113-5199. 1981. $46. DEMO and LOAN. DI 650.1 MINN 1981-2.
Includes 1 disk and support manual: Contains information processing programs that allow a class to set up and experiment with a computer-based payroll system. These programs and support materials provide experience in creating data files for a hypothetical company payroll. For grades 9 to 12.

* Business Volume 3. Apple. Minnesota Educational Computing Consortium (MECC), 2520 Broadway Dr., St. Paul, MN 55113-5199. 1981. $49. DEMO and LOAN. DI 650.1 MINN 1981-3.
Includes 1 disk, support manual, and answer key: Requires a dual disk drive and a 132-character printer. Provides realistic experience with a computerized accounting system. Designed to supplement an advanced or second-year accounting class. The package consists of four integrated systems: general ledger, accounts payable, accounts receivable and inventory control. For grades 9 to 12.

* Career Directions. Apple. Jefferson Software, Systems Software Associates, Inc., 723 Kanawha Blvd., E, Charleston, WV 25301. 1982. $89. DEMO. DI 373.23819 MARG 1982-1.
Includes 2 disks, user's manual and reviews: Designed to involve the user in a systematic approach to making career decisions. Divided into 3 major sections: Career Assessment, Career Analysis and Career Planning.

* Career Interest Program. Apple. Occupational Awareness, P.O. Box 948, Los Alamitos, CA 90720-0948. 1984. DEMO. DI 373-23819 OCCU 1984-1.
Includes 1 disk, 30 student handbooks, and 1 pad of 100 student worksheets: Designed to help the user understand how to choose a career goal by choosing from different educational levels, basic interest areas, and various work activities to complete a career search.

* Computer Assisted Career Selection. Apple, Commodore Pet, and TRS-80. Occupational Awareness, Software Division, P.O. Box 948, Los Alamitos, CA 90720-0948. 1982. DEMO DI373.23819 OCCU 1982-1-3.
Includes one disk and one pad of Job Characteristics: This program selects occupations which correspond to the selected characteristics chosen by the user.

* Computer Discover, Wordskills for the Microcomputer, Discovering Basic. Apple. Science Research Associates, Inc., 155 N. Wacker Dr., Chicago, IL 60606. 1983. $200 package No. 1. $225/classroom package No. 2. $210 package No. 3. DEMO. DI 651.8 SRA 1983-1.
Includes 1 disk: This disk is a sample of 3 different programs. Computer Discovery covers computer history, hardware and software concepts, writing simple programs, and the computer's role in society. Four games motivate students to sharpen language art skills while they compete against the computer or a classmate. Games emphasize synonyms (RevealIt), definitions (KnowIt), antonyms (WordMaze), and analogies (Name That Word). Discovering Basic is designed to teach fundamental programming concepts and show how to write simple programs in BASIC.

* Computer Occupations. TRS-80. Project Discovery, Experience Education, 401 Reed St., Red Oak, IA 51566. 1983. $185. LOAN DISK. DI651.84 EXPE 1983-1.
Includes 1 disk, instructor's notes, student instructions, travel itinerary slips, computer printout sheets and income tax forms: Designed for students to experience basic data entry, word processing and computer programming using a computer.

* Computerized Career Assessment and Planning Program. Apple. Jefferson Software, Systems Design Associates, Inc., 723 Kanawha Blvd. E, Charleston, WV 25301. 1982. $485. DEMO. DI 373.23819 JEFF 1982-1.
Includes 8 disks, user's manual, 16 student user reports (1984) and reviews: Designed to involve the student in a systematic approach to making career decisions. Contains 4 separate programs: Career Assessment, Selecting Alternatives, Career Planning and Career Exploration.

* Computerized Career Assessment and Planning Program. IBM PC. Jefferson Software, Systems Design Associates, Inc., 723 Kanawha Blvd. E, Charleston, WV 25301. 1985. DEMO. DI 373.23819 JEFF 1985-1.
Includes 4 disks and user's manual: Designed to involve the student in a systematic approach to making career decisions. Allows students to discover career interests, determine what jobs relate to career interests and abilities, and develop an orderly plan to enter the occupation of their choice.

Computer Explorations for Business. IBM PC, Apple IIe, IIc, II+ or compatible computers. Manchester: McGraw-Hill, 1986.

* Cronk, Loren and Richard Wittaker. The Print Shop. Apple. Broderbund Software, 17 Paul Dr., San Rafael, CA 94903. 1984. DEMO. DI 604.2 CRON 1984-1.
Includes 2 disks and reference manual: Graphics program allows user to design and print decorative greeting cards, invitations, announcements, stationery, letterhead, banners, signs, etc.

* Data Base Manager II. The Integrator - IBM PC. Alpha Software Corp., 30 B St., Burlington, MA 01803. 1983. DEMO. DI 651.8442 ALPH 1983-1.
Includes 2 disks, 1 audio-cassette and documentation: Requires 2 disk drives (1 double-sided). Printer optional. Easy-to-use data base management system. Integrates: VisaCalc (DIF format files); Multiplan (SYLK format files); Lotus 1-2-3 (worksheets and import files); other spreadsheets supporting the DIF Files; WordStar (including production of mailmerge files); and other word processors supporting IBM PC-DOS files.

Data Entry in Business: Concepts and Applications. IBM PC, XT, Apple IIe, IIc, IIGS or compatible computers. Manchester: McGraw-Hill, 1988.

* Davis, W. Robert. Easy Checkbook. TRS-80 Model III. W. R. Davis, P.O. Box 3196 Santa Rosa, CA 95402. 1982. $12.95. DEMO and LOAN. DI 640.73 DAVI 1982-1.
Includes 2 disks and documentation: Designed for use as a monthly checkbook and bank statement accounting system. Can also be used to perform checkbook arithmetic.

dBASE III: A Ready Reference Manual. Reading: Addison-Wesley Publishing Company.

dBASE III Plus Educational Version. Reading: Addison-Wesley Publishing Company.

* Depew, Bill and Marlene Hamerling. Magic Window II. Apple. Artsci, Inc., 5547 Satsuma Ave., North Hollywood, CA 91601. 1982. $149.95. DEMO. DI651.4 DEPE 1982-1.
Includes 2 disks and program manual and editing commands chart: Word processing system which works like a typewriter.

Developing Editing Skill. IBM PC, Apple IIe, IIc, TRS-80, Wang OIS computers. Manchester: McGraw-Hill, 1986.

Developing Proofreading Skill. IBM PC, Apple IIe, IIc and TRS-80 computers. Manchester: McGraw-Hill, 1987.

* EasyWriter II System. IBM PC. SORCIM/IUS Micro Software, 2195 Fortune Dr., San Jose, CA 95131. 1982. DEMO and LOAN. DI 651.4 SORC 1982-1.
Includes 1 disk and documentation: A demonstration disk for the EasyWriter II word processing system. Includes correction speller, line drawing and mail merge.

* Electronic Spreadsheet. Apple. Minnesota Educational Computing Consortium (MECC), 2520 Broadway Dr., St. Paul, MN 55113-5199. 1981. $49. DEMO. DI651.8422 MINN 1981.
Includes 1 disk and teacher's manual: Provides a tutorial which introduces users to the VisiCalc commands and provides practice exercises. Part of the manual contains sets of practical problems to solve with an electronic spreadsheet. These are grouped by specific business education courses, such as consumer economics, record keeping, data entry, bookkeeping and accounting, office machines, office procedures and business management. VisiCalc is a product of VisiCorp and must be purchased separately. For grades 9 to 12.

* GOCI Systems Plus Business Accounting Package. Apple. Otis Companies, Inc. (GOCI), 7710 Computer Ave., Suite 115, Pentagon Office Park, Edena, MN 55435. 1980. $41.65/whole program. DEMO. DI 657 GEOR 1980-1.
Includes 2 sample disks and a packet of documentation: Demonstrates 10 interactive module programs: set-up, payables, inventory control, receivables, order processing, fixed assets, payroll, disbursements, banking and general ledger.

* The Graphic Magician. Apple. Penguin Software, Geneva, IL. 1980. $59.95/whole program. DEMO. DI 604.2 PENG 1980-1.
Includes 1 sample disk: Shows how to create animation in programs, add graphics to adventure games (or other programs which require many pictures and objects) and create and use a new type of Apple shape table that can include color and angular movements.

* Graves, William G. and William Depew. Magic Words. Apple. Artsci, Inc., 5547 Satsuma Ave., North Hollywood, CA 91601. 1982. $69.95. DEMO DI 651.4 GRAV 1982-1.
Includes 1 disk and program manual: Professional proofreading system compatible with most Apple II word processing systems. Proofreads at the rate of 1,600 words per second and has a 14,000-word dictionary.

* Great Plains Software Demo. IBM PC. Great Plains Software, 1701 SW 38th St., P.O. Box 9739, Fargo, ND 58109. 1984. $25. DEMO and LOAN. DI 657 GREA 1984-1.
Includes 1 disk and documentation: A demonstration disk for the Great Plains Hard Disk Accounting Series which includes General Ledger with Financial Reporting and Budgeting, Accounts Receivable, Accounts Payable, Payroll and more.

Gregg Keyboarding for Information Processing. TRS-80, Apple II+ and IIe computers. Manchester: McGraw-Hill.

Gregg Typing, Series Eight, Timed Writings. For IBM PC and XT computers. Manchester: McGraw-Hill, 1987.

* How to Get and Hold a Job. Apple, TRS-80. Aquarius, P.O. Box 128, Indian Rocks Beach, FL 33535. $29.95. DEMO and LOAN. DI 371.46 AQUA 1983-1-2.
Includes 1 disk and documentation: Students learn job selection, interview techniques, employee-employer relations and other essential occupational skills.

* Hudson, David K. Combined Enhanced Graphics Software. Apple. Computer Stations, Inc., 11610 Page Service Dr., St. Louis, MO 63141. 1980. $39.95/disk. $12.95/program handbook. DEMO. DI 604.2 HUDS 1980-1.
Includes 1 disk and program handbook: Shows how to design on a hi-resolution screen and then transfer to paper.

* Hyre, C. Steven, E. Ty Garden and Julie Flanagan-Margolis. Career Directions. TRS-80 Model III/IV. Jefferson Software, Systems Software Associates, Inc., 723 Kanawha Blvd., E, Suite 403, Charleston, WV 25301. 1983. $89. DEMO. DI 373.23819 MARG 1983-1.
Includes 2 disks, 5 reviews and documentation: Designed to involve the user in a systematic approach to making career decisions.

Information Processing, 1981. Mid-America Vocational Curriculum Consortium, 1500 W. Seventh Ave., Stillwater, OK 74074-4364.

Introduction to Computer Applications: A Hands-On Approach. Apple IIe, IIc and TRS-80 computers. Manchester: McGraw-Hill, 1986.

Introduction to Microcomputer Applications, 1984. Mid-America Vocational Curriculum Consortium, 1500 W. Seventh Ave., Stillwater, OK 74074-4364.

* Jefferson, J. Freshman Explore. Apple. Minuteman Regional Vocational Technical School, 578 Marrett Rd., Lexington, MA 02173. 1980. DEMO AND LOAN. DI 373.23619 JEFF 1980-1.
Includes 1 disk: A public domain program designed to help freshman students decide on what vocational subject to select as a major.

* The Job and You. TRS-80 Model III. Aquarius, P.O. Box 128, Indian Rocks Beach, FL 33535. 1982. $29.95. DEMO and LOAN. DI 371.46 AQUA 1982-4.
Includes 1 disk and teacher's guide: Designed to teach the user about attitudes and obligations of an employee.

Keyboarding for the Physically Handicapped. Apple II+, IIe, IIc, TRS-80, IBM PC or PCjr. computers. Manchester: McGraw-Hill, 1985.

* LeScript Word Processing System. TRS-80. Anitek Software Products, P.O. Box 361136, Melbourne, FL 32936. 1985. $129.95. DEMO and LOAN. DI 651.4 MELB 1985-1.
Includes 1 disk and documentation: Demonstration disk for the LeScript Word Processing System.

* Long, James P. and Delia Neuman. Career Planning System (CPS) Microcomputer Version. Atari 800. The Conover Co., P.O. Box 155, Omro, WI 54963. 1983. DEMO. DI 373.23819 LONG 1983-1.
Includes 3 sample disks: CPS is a highly structured, closely integrated instructional package that provides a wide variety of career exploration and planning experiences for students or clients who are developing a career plan. System is appropriate for regular and special needs students reading at the 3.5 grade level.

Lotus 1-2-3: A Ready Reference Manual. Reading: Addison-Wesley Publishing Company.

LOTUS 1-2-3 Student Release, software/manual. Reading: Addison-Wesley Publishing Company.

* Margolis, Julie. Career Directions. IBM PC. Jefferson Software, Systems Software Associates, Inc., 723 Kanawha Blvd., E, Charleston, WV 25301. 1982. $89. DEMO. DI 373.23819 MARG 1982-1.
Includes 1 disk and user's manual and 5 reviews: Designed to involve the user in a systematic approach to making career decisions. Divided into 4 major sections: Career Assessment, Career Analysis, Career Exploration and Career Planning.

* MC/CVIS (Computerized Vocational Information System). Apple. CVIS Distribution Center, 230 Schilling Circle, Hunt Valley, MD 21031. 1981. DEMO. DI373.23819 CVIS 1981-1.
Includes 1 disk and sample counselor's manual: Demonstrates a program that attempts to provide an organized approach to career decision-making. Allows user to explore over 400 occupations and over 1,700 colleges and universities.

McGraw-Hill Database. IBM PC or XT, Apple IIe, IIc, IIGs or compatible computers. Manchester: McGraw-Hill, 1987.

McGraw-Hill Graphing. IBM PC or XT, Apple IIe, IIc, IIGS or compatible computers. Manchester: McGraw-Hill, 1987.

McGraw-Hill Integrated Software Series. IBM and Apple IIe, IIc, IIGS or compatible computers. Manchester: McGraw-Hill, 1988.

McGraw-Hill Spreadsheet. IBM PC or XT, Apple IIe, IIc, IIGS or compatible computers. Manchester: McGraw-Hill, 1987.

McGraw-Hill Word Processing. IBM PC or XT, Apple IIe, IIc, IIGS or compatible computers. Manchester: McGraw-Hill, 1987.

Microcomputer Applications for the Data Processing Work Kit. TRS-80, Apple II+, IIe or IBM PC computers. Manchester: McGraw-Hill, 1983.

* Microcomputer Exploration of Career Areas: MECA. Apple. The Conover Co., P.O. Box 155, Omro, WI 54963. DEMO. DI 371.9 CONO 1983-1.
Includes 1 sample disk: MECA is a "hands-on" career exploration system designed especially for students with special needs. MECA relied on hi-resolution computer graphics coupled with a cassette control device (for non-readers) to administer the "hands-on" portion of the program. Occupational areas covered include auto mechanics, building, maintenance, business and office, conservation, cosmetology, custodial housekeeping, distribution, food service, health care, horiticulture, graphic design, electronics, small engines and manufacturing.

Microcomputer General Ledger System. IBM PC, TRS-80, Apple II+, IIE or IIc computers. Manchester: McGraw-Hill, 1985.

* Micro-Quest. Apple. Horizons, 217 E. Monroe, Suite 203, Springfield, IL 62706. 1983. $400.60. DEMO. DI 373.23819 HORI 1983-1.
Includes 1 disk, cover letter, product sheet, occupational list, handbook and sample printouts: TRS-80 Model III also available

from publisher. A microcomputer version of the Career Information System (CIS), this program can be used as a guide in planning a career.

* Micro Skills. Apple. Horizons, 217 E. Monroe, Suite 203, Springfield, IL 62706. 1983. $490. DEMO. DI373.23819 EURE 1983-1.
Includes 1 disk, user handbook, skills inventory worksheet and documentation by Eureka Corp., Richmond, CA: Identifies occupations appropriate for the user. Includes a skills inventory checklist.

MultiMate: A Ready Reference Manual. Reading: Addison-Wesley Publishing Company.

Nitz, Lawrence H. Business Analysis and Graphics with Lotus 1-2-3. Englewood Cliffs: Prentice-Hall, Inc., (no copyright date).

* Office Filer. IBM PC. Digital Marketing Corp., 2363 Boulevard Circle, Walnut Creek, CA 94595, 1982. $395. DEMO. DI 651.5 DIGI 1982-1.
Includes 3 disks and reference manual: Features a flexible interface for specifying the information to be kept in files as well as the format of both data input screens and reports. Works with three basic types of objects called forms, files and reports.

* Office Work. Apple. Intellectual Software, 798 N. Ave., Bridgeport, CT 06606. 1983. $34.95. DEMO and LOAN. DI 651.3 SCAN 1983-1.
Includes 1 disk and documentation developed by Scandura Training Systems, Inc.: Interactive tutorials describing career opportunities and requirements, risks and rewards in office work. Part of Exploring Career Options Series. Grades 6-12.

* Oklahoma Micro-VIEW. Apple and TRS-80. Dept. of Vocational and Technical Education, 1515 W. 7th Ave., Stillwater, OK 74074. 1982. $22.50. DEMO. DI 373.23819 OKLA 1982-1-2.
Includes 1 disk, a structured search, worksheet, and user's manual: Designed to help prepare a profile of interests and career goals. A personal profile is prepared considering seven categories: interests, areas of work, physical strengths, physical capabilities, working conditions, education and temperaments.

Pacing Software for Progressive Typewriting Speed Practice. IBM PC or XT computers. Manchester: McGraw-Hill, 1988.

Peters, Cortez. The Cortez Peters Championship Typing Drills. IBM PC and Apple computers. Manchester: McGraw-Hill, 1987.

* PFS: File. Apple. Software Publishing Corp., 1901 Landings Dr., Mountain View, CA 94043. 1983. DEMO. DI 651.8442 SOFT 1983-1. Includes 3 disks, a user's manual and solutions instruction: The three programs include PFS-File, a filing system for storing and retrieving information; PFS-solutions, a data disk for use with PFS-File; and PFS-Graph, which produces graphs and charts from PFS-File disks.

* Perfect Writer. IBM PC. Thorn EMI Computer Software, Inc., 1881 Langley Ave., Irvine, CA 92714. 1984. $74. DEMO and LOAN. DI 651.4 THOR 1984-1.
Includes 1 disk and documentation: A demonstration disk for the "Perfect Writer" program specifically designed for word processing.

Pillsbury and Ripperger. Microcomputer-Oriented Accounting: A CAI Approach. Cincinnati: South-Western Publishing Company.

Preview IBM PC, disk. Reading: Addison-Wesley Publishing Company.

Preview Apple II, disk. Reading: Addison-Wesley Publishing Company.

* Rue, Robert Timothy. Colortext. TRS-80 Color Computer. Bertamax Inc., 3647 Stone Way N., Seattle, WA 98103. 1984. $59.95. DEMO DI 604.2 RUE 1984-1.
Includes 1 disk and documentation: Designed for use as a high-resolution graphics text driver which displays character fonts and graphics simultaneously and includes the use of all features of Extended Basic.

Skillbuilding: Building Speed and Accuracy on the Keyboard. IBM PC or XT computers. Manchester: McGraw-Hill, 1987.

Smartype--A Keyboarding Program. Apple II+, IIe or IIc computers. Manchester: McGraw-Hill, 1986.

* South-Western Publishing Company Demonstration Diskette. Apple, TRS-80. South-Western Publishing Co., 355 Conde St., West Chicago, IL 60185. 1984. $59.50/Microcomputer-Oriented Accounting: A CAI Approach; $37.50/Automated Accounting for the Microcomputer; $59.50/Data Entry Activities for the Microcomputer; $59.50/Structured Basic; $200/Microcomputer Keyboarding. DEMO and LOAN. DI 650.1 SOUT 1984-1-2.
Includes disks and documentation: Includes samples of the five programs listed above.

* Stroud, Larry N. Computing Cash Discounts. Apple. Learning Resources, North Carolina Rural Renaissance Consortium, 116 W. Edenton St., Raleigh, NC 27611. 1983. $16.50. DEMO. DI 658.87 STRO 1983-1.
Includes 1 disk and documentation: Instructs the student about the concept of cash discount and how cash discounts are calculated. The student is also instructed about the use of Julian dates and a time table in computing the expiration dates of cash discount periods.

SuperCalc 3: A Ready Reference Manual. Reading: Addison-Wesley Publishing Company.

* TGS: The Graphics Solution. Apple. Accent Software, 4546 El Camino Real, Suite S, Los Altos, CA 94022. 1982. $149.95. DEMO. DI 604.2 ACCE 1982-1.
Includes 2 disks, user's manual and 2 reviews: Graphics editor and animation system for combining graphics and text in a manner similar to making a movie film. Features of this program are drawing shapes and making them move.

* Visifile. Apple. Visicorp Personal Software, 2895 Zanker Rd, San Jose, CA 95134. 1981. DEMO and LOAN. DI 651.8442 VISI 1981-1.
Includes 1 sample disk: An information or data management system by the makers of VisiCalc.

* Visitrend and Visiplot. Apple. Visicorp Personal Software, 2895 Zanker Rd., San Jose, CA 95134. 1982. DEMO. DI 604.2 VISI 1982-1.
Includes 1 disk: Designed for use with data analysis and presentation graphics. Produces line, bar, pie, area x-y and high-low charts with numerous variations and options. Can interchange data with other VisiCorp programs.

WordPerfect 4.2 Educational Version. Reading: Addison-Wesley Publishing Company.

WordPerfect: A Ready Reference Manual. Reading: Addison-Wesley Publishing Company.

WordStar: A Ready Reference Manual, educational version (book and disk package) WordStar 3.3. Reading: Addison-Wesley Publishing Company.

* Write Away. Apple. Midwest Software Associates, 1160 Appleseed Lane, St. Louis, MO 63132. 1984. DEMO. DI 651.4 MIDW 1984-1.
Includes 1 disk, manual, command card and game key: Word processing/terminal communications system composed of three major programs: edit, format and terminal.

Other Resources

Bloom, Robert. "A Primer on Microcomputers for Classroom Applications," Viewpoints in Business Education, MPC Educational Publishers, a division of Milady Publishing Corporation, September 1986, Vol. 12, No. 1.

Buller, Gary W. "A Guide to Personal Computers," Fact Sheet, Illinois Farm Electrification Council, November 1984, No. 8.

Elia, Lewis M. "Data Base Management--What Does it Mean to Secretaries?" Computers in Business Education, MPC Educational Publishers, a division of Milady Publishing Corporation, September 1986, Vol. 3, No. 1.

Fall, Joseph A. "Information Processing Potpourri: Computer Literacy," Computers in Business Education, MPC Educational Publishers, division of Milady Publishing Corporation, April 1986, Vol. 2, No. 8.

"Integrated Software: Is It for Everybody?" Computers in Business Education, March 1986, Vol. 2, No. 7.

"Integrated Word Processing and Data Processing." Computers in Business Education, February 1986, Vol. 2, No. 6.

"Introduction to Word Processing with WordStar." Vocational Education Service, University of Illinois, Illinois State Board of Education, Adult, Vocational and Technical Education publication.

TEACHER REFERENCES

References in this section preceded by an asterisk (*) are available from the Illinois Vocational Curriculum Center which collects two types of software: one which is circulating and available for demonstration in the Center and one which is available only for demonstration. To obtain up to six materials on a 30-day loan, write, call or visit the East Central Network/Illinois Vocational Curriculum Center, Sangamon State University, F-2, Springfield, IL 62708 (217/786-6375 or toll-free in Illinois 800/252-IVCC).

* A.E.N. Grading System. Apple. Avant-Garde Creations, P.O. Box 30160, Eugene, OR 97403. Includes 1 disk and documentation by David H. Miller. 1981. DEMO. DI 371.272 MILL 1981-1. Grading system calculates grade percentages, prepares reports on individuals, groups or combinations, and assists the user in tracking grades, assignments and rosters.

* All About Personal Computers. Datapro Research Corp, 1805 Underwood Blvd., Delran, NJ 08075. 1980. $25. 651.8 DATA 1980-1. Gives complete descriptions of 15 of the more popular computers.

* Apple Grade Book. Apple. J and S Software, 140 Reid Ave., Port Washington, NY 11050. 1981. Includes 1 disk and program documentation. $34.50 DEMO. DI 371.272 JAND 1981-1. Teachers can enter up to 40 grades per student for classes holding up to 80 students. A disk can hold up to 250 students in up to 20 classes. A teacher can use this program for an unlimited number of students and classes, since new class data disks can be used at any time.

* Barden, William, Jr. Microcomputers for Business Applications. Howard W. Sams & Co., Inc., 4300 West 62nd St., Indianapolis, IN 46208. 1979. 256 pp. $8.95. 651.8 BARD 1979-1. This publication describes the several general types of microcomputers that can be used in the small-business environment, highlights pitfalls to be avoided, and explains all computer-related terms in ordinary, easy-to-understand language.

* Blumenthal, Susan. Understanding and Buying a Small Business Computer. Howard W. Sams & Co., 4300 W. 62nd St., Indianapolis, IN 46206. 1982. 157 pp. $8.95. 651.8 BLUM 1982-1. Explains in common terms the language of data processing and gives helpful hints to the small business owner for choosing microcomputer software and hardware.

* Brooner, E. G. Microcomputer Data-Base Management. Howard W. Sams & Co., Inc., 4300 W. 62nd St., Indianapolis, IN 46206. 1982. 158 pp. $12.95. 651.8 BROO 1982-1. Clarifies the general manipulative techniques used in managing data and provides some practical examples from existing systems.

* The Cactus Grade Book. Apple. The Cactusplot Co., 1442 N. McAllister, Tempe, AZ 85281. 1982. $45. Includes 1 disk and user's manual. Requires data disk. DEMO. DI 371.242 CACT 1982-1. Designed for use in classroom recordkeeping.

* Classfile. TRS-80 Model III or IV. Teach Yourself by Computer Software, 2128 W. Jefferson Rd., Pittsford, NY 14534. 1981. $49.95. Includes 1 disk and documentation. DEMO. DI 371.272 TEAC 1981-1. A comprehensive recordkeeping system for the classroom teacher which can be utilized for up to 45 students with up to 25 grades assigned to each student.

* *Computer Literacy Instructional Program*. Apple. Educational Activities, Inc., P.O. Box 392, Freeport, NY 11520. 1982. $69. Includes 1 disk, program guide and reference sheets by Ann Edson and Amy McComb, DEMO. DI 651.85 EDSO 1982-1.
Designed for use by teachers, administrators and other school-related personnel and provides a self-directing, self-correcting program in computer literacy.

* Doerr, Christine. *Microcomputers and the 3R's: A Guide for Teachers*. Hayden Book Company, Inc., 50 Essex St., Rochelle Park, NJ 07662. 1979. 177 pp. $8.85. 651.8 DOER 1979-1.
Focuses on the various ways microcomputers can be used to enrich and support the average curriculum.

* Edson, Ann and Amy McComb. *Computer Literacy Instructional Program*. Apple. Educational Activities, Inc., P.O. Box 392, Freeport, NY 11520. 1982. $69. DEMO. DI 651.84 EDSO 1982-1.
Includes 1 disk, program guide and reference sheets: Designed for use by teachers, administrators and other school-related personnel and provides a self-directing, self-correcting program in computer literacy.

* *Educational Software Catalog for Commodore Computers*. Comm*Data Systems, Inc., P.O. Box 325, Milford, MI 48042. 1981. 35 pp. $2.50. 651.8 COMM 1981-1.
A catalog of computer programs which have been specifically designed for use on the Commodore PET microcomputer.

* *Educational Software Directory; Apple II edition*. Sterling Swift Publishing Co., P.O. Box 188, Manchaca, TX 78652. 1981. 103 pp. 651.8 STER 1981-1.

* *Educational Software for: Apple, Atari, Compucolor*. Queue, 5 Chapel Hill Dr., Fairfield, CT 06432. 1981. 81 pp. $8.95. 651.8 QUEU 1981-1.
Includes a listing of programs and descriptions with prices for use with Apple and Atari microcomputers.

* *Educational Software for: PET, TRS-80*. Queue, 5 Chapel Hill Dr., Fairfield, CT 06432. 1981. 87 pp. $8.95. 651.8 QUEU 1981-2.
Includes a listing of programs and descriptions with prices for use with TRS-80 and PET microcomputers.

* Frederick, Franz J. *Guide to Microcomputers*. Association for Educational Communications and Technology, Publications Sales, 1126 Sixteenth St., NW, Washington, DC 20036. 1980. 152 pp. 651.8 FRED 1980-1.
Shows how microcomputers can be used for educational instruction.

* Frenzel, Louis J., Jr. The Howard W. Sams Crash Course in Microcomputers. Howard W. Sams & Co., Inc., 4300 W. 62nd St., Indianapolis, IN 46206. 1980. 264 pp. $19.95 651.8 FREN 1980-1.
Explains the basics, number systems, memories, architecture input/output devices, peripherals, floppy disks, software programming and application of microcomputers.

* Grade Reporter. Apple. Cross Educational Software, 1802 No. Trenton St., P.O. Box 1536, Ruston, LA 71270. 1983. $19.95. Includes 1 disk and user's manual by Carl Rutledge and Mark Cross. DEMO. DI 371.272 RUTL 1983-1.
Contains 2 programs which compute the averages for all students in a class. Includes Small Class Grade Reporter and Large Class Grade Reporter.

* Gradebook Plus Pro. Apple. Educational Microcomputer Associates, Inc., P.O. Box 339, Los Altos, CA 94023. 1984. $150. Includes 1 disk and user's manual. DEMO AND LOAN. DI 371.272 EDUC 1984-1.
Demonstration disk allows educators to keep track of scores and grades.

* Gradekeeper. TRS-80 Model III or IV. Bertamax, Inc., 3647 Stone Way N., Seattle, WA 98103. 1984. $39.95. Includes 1 disk and documentation by Norman D. Hardy. DEMO. DI 371.272 HARD 1984-1.
Designed to assist teachers with grade keeping and grade-a-test score analysis. Up to 27 sets of test scores on each student and up to 33 students can be kept on this program.

* HP/Apple Library-Business Education. Total Information Educational Systems. 1979. 651.8 TOTA 1979-2.
Document programs for ATG (Accounting), bank, farm simulation, KEYBRD (keyboard characters drill), market, MORGAG (Mortgage), pay, stock and typing.

* Loop, Liza and Paul Christensen. Exploring the Microcomputer Learning Environment. Far West Laboratory for Educational Research and Development, 1855 Folsom St., San Francisco, CA 94103. 1980. pp. 75. 371.1224 LOOP 1980-1.
Summarizes the current state-of-the-art on educational use of low-cost, high-capability, self-contained microcomputers.

* Microcomputer Hardware. Center for Occupational Research and Development, 6106 LakeAir Dr., Waco, TX 76718. 1981. $17.50. 521.6 CENT 1981-11 Course 9.
Post secondary curriculum includes 7 modules: digital components, semi-conductor logic families, input/output devices and techniques, analog/digital conversion, data communication, bus systems and trouble-shooting microcomputer components.

* Microcomputer Operations. Center for Occupational Research and Development, 610 LakeAir Dr., Waco, TX 76710. 1981. $17.50 531.6 CENT 1981-1 Course 8.
Post secondary curriculum includes 7 modules: computer codes, microcomputer architecture, microcomputer applications, disk-based operating systems, energy applications of microcomputers, introduction to BASIC and BASIC programming.

* Microcomputers: A Challenge for Vocational Educators. Illinois State Board of Education, Department of Adult, Vocational & Technical Education, 100 North First Street, Springfield, IL 62777, and Illinois State University, Normal, IL 61761. 1982. 651.8 ILLI 1982-1.
Collection of papers presented at the Illinois Microcomputer Conference held at Normal, IL, March 25, 1982.

* Poole, Lon. Apple II User's Guide. Osborne/McGraw-Hill, 630 Bancroft Way, Berkeley, CA 94710. 1981. 385 pp. 651.8 POOL 1981-1.

* Quickscore. Apple. Pica Foundation, Inc, P.O. Box 36349, Charlotte, NC 28236. 1983. $300. Includes 1 disk, user's guide, 100-item answer cards, and 50-item answer card. Requires Optical scan card reader. DEMO. DI 371.272 PICA 1983-1.
Program for scoring, evaluating and reporting test results. Students mark answers to true/false, multiple choice and matching items on answer cards. Quickscore compares student responses to the key and figures scores.

* Swinney, Everette. Super Quiz II. Sterling Swift Publishing Co., 7901 S. IH-35, Austin, TX 78744. 1983. $49.94. Includes 1 disk and documentation. DEMO. DI 371.26 SWIN 1983-1.
Multiple choice testing system enables the teacher to create a test bank of up to 10,000 questions; add/edit/replace questions; select questions on one or more chapters/topics; and print multiple copies.

* Teacher Assistance. Apple. Department of Science and Mathematics Education, Weniger 253, Oregon State University, Corvallis, OR 97331. 1984. Includes 1 disk and documentation by Leon Roland. DEMO AND LOAN. DI 371.102 ROLA 1984-1.
Collection of programs designed to use in workshops to assist teachers in using the computer as a tool. Programs include job placement, work sheet and grade book.

* Teacher Utilities Volume 1. Apple. Minnesota Educational Computing Consortium (MECC), 2520 Broadway Dr., St. Paul, MN 55113-5199. 1981. $46. Includes 1 disk and support manual. DEMO. DI 651.8425 MINN 1981-1.
Design poster and puzzles or create tests and drills with the programs: Block Letters, Posters, Crossword, Crossword Edit, Word Find, Word Find Edit, Percent, Frequency, Review, Review Load and Test Generator. Five of the programs can be used with a printer. Programs produce statistical data for compiling student grades and reports. Includes programs for all grades.

* Teacher Utilities Volume 2, 3, and 4. Apple. Minnesota Educational Computing Consortium (MECC), 2520 Broadway Dr., St. Paul, MN 55113-5199. 1981. $100. Includes 3 disks and support manual. DEMO. DI 651.8425 MINN 1981-2.
This collection allows creation of drills or exercises based on a list of questions and answers or a list of vocabulary words. The first disk contains the utilities for creating the lessons, while the other two disks contain the programs for presenting the lessons.

* Teacher's Quiz Designer. IBM PC. IBM Corp., 1830 Water Place, Suite 210, Atlanta, GA 30339. 1984. $70. Includes 3 disks, user's manual by John Marsland and student guide reference card. DEMO. DI 371.26 MARS 1984-1.
Allows the user to create, edit and administer quizzes and record student scores and averages.

* Test Writer. TRS-80 Model III or IV. BertaMax, Inc., 3647 Stone Way, N. Seattle, WA 98103. 1984. $24.95. Includes 1 disk and documentation by Edward C. Beardslee. DEMO. DI 371.26 BEAR 1984-1.
Designed for use by teachers to simplify the test-making process. Each test may have 40 or fewer items, except the Essay Tests which have a maximum of 10 items. Multiple choice items may have 2 to 4 choices.

* Testing Trio. Apple. Jim Sparks. Mid-Central Illinois Computer Alliance, Lake Land College, Route 45, Mattoon, IL 61938. Includes 1 disk and documentation. DEMO. DI 371.26 SPAR 1984-1.
Enables teacher to write a set of multiple choice questions on any subject.

* Thomas, James L. Microcomputers in the Schools. Oryx Press, 3930 E. Camelback Road, Phoenix, AZ 85018. 1981. 158 pp. $23.95. 651.8 THOM 1981-1.
Shows how microcomputers are being used and what their potential might be for teachers, administrators and media specialists in the public school setting.

* Vann, Eric G. Microcomputers in the Classroom: A Practical Guide for Educators. Institute for Educational Research, 793 North Main St., Glen Ellyn, IL 60137. 1981. 41 pp. 651.8 VANN 1981-1.
This guide includes purchasing suggestions, microcomputer funding sources, computer literacy bibliography, language choices, mass storage devices, labor-saving software, designing software, glossary, types of CAI and directory.

* Waite, Mitchell and Michael Partdee. Microcomputer Primer. Howard W. Sams & Co., Inc., 4300 62nd St., Indianapolis, IN 46206. 1981. 384 pp. $14.50. 651.8 WAIT 1981-1.
Deals with basic computer concepts, general processing units and memories. Includes appendices.

* Webster, Tony. Microcomputer Buyer's Guide. Hayden Book Company, Inc., 500 Essex St., Rochelle Park, NJ 07662. 1982. 158 pp. $25. 651.8 WEBS 1981-1.
Designed to provide detailed information on the large range of different microcomputers and microcomputer systems currently available.

Teacher Methodology

Dickey-Olson, Patsy A. "Bringing the Electronic Age into Your Classroom," The Balance Sheet, January-February 1987, pp. 30+.

Schultheis, Robert A. "Designing Spreadsheets for Business Decision," Business Education Forum, May 1987.

White, Bonnie Roe, CPS. "Teleconferencing: Its Potential in the Modern Office (Part 1), Century 21 Reporter, Fall 1984, pp. 4+.

White, Bonnie Roe, CPS. "Teleconferencing: Its Potential in the Modern Office (Part 2), Century 21 Reporter, Spring 1985, pp. 5+.

INSTRUCTIONAL PLAN

The course is designed to include enough learning activities for a one-year course in computer software applications. Departments wishing to offer a one-semester course should first include the items marked with an asterisk within each unit of instruction. Any additional instruction time can be devoted to other learning activities included in any of the units. The teacher needs to provide instruction in concepts, terminology and procedures before learning activities are assigned.

Units A and B provide the student with an introduction to the computer and the technology (hardware and software) involved in business use. The remaining units involve the student with hands-on activities using computers. Unit C includes learning activities for getting the computer and the software ready. Units D through I include learning activities for actual software applications in the systems areas of word processing, data base, spreadsheet, graphics and telecommunications.

Some learning activities that integrate selected software applications have been presented. Immediately following the units on word processing, data base and spreadsheet applications is a unit on integrated applications. This unit of instruction involves the student in integrating the word processing, data base and spreadsheet skills previously learned.

This curriculum guide is being prepared with the assumption that students will have had at least one semester of keyboarding prior to enrolling in this course. For a ninth- or tenth-grade student to be able to perform the basic applications included in the units, a keyboarding skill of 30 words per minute is needed.

Another assumption is that the classroom will have microcomputers for the students to use for these applications. Having enough computers so that each student can use one is definitely the best arrangement. Enough computers should be available so that no more than two or three students share one computer.

If the course is to be one semester in length rather than one year, it is recommended that a "shortened" course outline be used as a guide. The items marked with an asterisk on the course outline are required, and the other unmarked items are considered optional as time permits.

The columns to the right show the approximate length of time, in weeks, that should be spent on each unit.

Course Outline

COMPUTER CONCEPTS AND SOFTWARE APPLICATIONS

	18 Weeks	36 Weeks
A. The Computer and Its Capabilities	1	4
*1. Value of computers		
*2. Status and uses of computers		
*3. Common computer terminology		
*4. Computer careers and training		
5. Information processing cycle		
6. Microcomputers		
7. Buying a microcomputer		

	18 Weeks	36 Weeks
B. Hardware and Software Concepts	1	4
*1. Hierarchy of data		
*2. Central processing unit		
*3. Devices and functions: input, storage, output, peripherals		
*4. Hardware: mainframe to microcomuter		
*5. Software: types (programming to packages) and categories (systems, programming, application, text development)		
6. Sources of information about hardware		
7. Sources of information about software		
8. Future trends in hardware and software		
C. Getting Ready for Computer Software Applications	1	1
*1. Getting the computer ready: initial operations		
*2. Getting the software ready: formatting blank disks		
D. Word Processing Applications	4	6/7
*1. Understanding word processing		
*2. Setting margins		
*3. Setting tabs		
*4. Setting line spacing		
*5. Justifying right margins		
*6. Centering data		
7. Finding and replacing a letter, word or sentence		
*8. Deleting a letter, word, sentence or paragraph		
*9. Inserting a letter, word, sentence or paragraph		
*10. Moving a word, sentence or paragraph within a document		
11. Moving a sentence, paragraph or merging documents		
12. Moving data between documents		
*13. Formatting short reports		
14. Formatting reports with footers, headers, superscripts and subscripts		
15. Formatting envelopes		
16. Formatting labels		
17. Spelling check		

	18 Weeks	36 Weeks
E. Spreadsheet Applications	4	6/7
*1. Understanding a spreadsheet		
*2. Understanding practical uses of a spreadsheet		
*3. Understanding basic functions of a spreadsheet		
*4. Getting ready to use a spreadsheet		
*5. Moving on a spreadsheet		
*6. Using prompts on a spreadsheet		
*7. Using labels, values and formulas		
*8. Using spreadsheet commands		
*9. Editing a spreadsheet		
*10. Formatting a spreadsheet		
*11. Finding information on a spreadsheet		
12. Solving problems on a spreadsheet		
13. Creating graphs on a spreadsheet		
14. Printing a spreadsheet		
15. Using advanced functions of a spreadsheet		
F. Data Base Applications	4	5/6
*1. Understanding a data base		
*2. Understanding practical uses of a data base		
*3. Entering data to a data base		
*4. Performing basic functions of a data base		
*5. Displaying a data base		
*6. Printing a data base		
*7. Editing a data base		
8. Merging a data base with other applications		
G. Integrated Applications	1	2
*1. Integrating word processing and data base		
*2. Integrating word processing and spreadsheets		
*3. Integrating word processing, data base and spreadsheet		

	18 Weeks	36 Weeks
H. Graphics Applications	1	3
*1. Understanding computer graphics		
*2. Identifying the parts of a graph		
*3. Creating, editing and printing a line graph		
4. Creating, editing and printing a bar graph		
5. Creating, editing and printing a pie graph		
I. Telecommunications	1	3
*1. Understanding telecommunications		
*2. Understanding telecommunications terminology		
*3. Using networking		
4. Working with bulletin boards: definition and access		
5. Simulating with telecommunication concepts		
Estimated times for learning activities	18	36

Suggested Time Schedule

The time schedule suggested for the "average" student to complete all of the learning activities in this curriculum guide is 180, 50-minute class sessions or one full year. Each learning activity includes a suggested completion time, i.e., a 50-minute class period, approximately 20 minutes, etc. The teacher may wish to vary the schedule to fit the needs and abilities of the students enrolled, the class period length, and the number of class sessions available for study.

Suggested Testing Schedule

1. Unit Tests: Since the content of each unit represents a unique topic, a test on each unit of instruction can be scheduled. It is suggested that, wherever practical, the unit test should include:
   a. Knowledges (40%) (concepts and understanding)
   b. Performance (50%) (completing a task similar to those included in learning activities for the unit)
   c. Attitude (10%) (appropriate attitudes toward computer usage)

   Each test could be divided into one class period for an objective test on knowledges and attitudes and one class period for a performance test.

2. Quizzes: Short quizzes (up to 10 items) may be given after each subtopic in a unit has been covered. Quizzes should be primarily on knowledges, concepts and attitudes if computers are not available for each student.

3. Comprehensive tests: At the end of each grading period (quarter or 6 weeks), a comprehensive test may be given that will measure those knowledges and skills developed during that time period. Completion of computer applications should be included if the classroom has one computer per student. The weights assigned to test items may be:
   a. Knowledges (40%)
   b. Performance (50%)
   c. Attitudes (10%)

   The teacher may decide to use two class periods for the test: knowledges and attitudes, one day; performance, one day.

4. Comprehensive semester and final examinations may be scheduled as required.

Suggested Grading Policies

A grading schema for the course should include emphasis on the following:

a. Completion of assigned/graded learning activities	45%
b. Quizzes	15
c. Unit test average	25
d. Semester test/final examination	15
	100%

The grading scale based on the above percentages might be:

100% - 90% = A
89% - 80% = B
79% - 70% = C
69% - 60% = D
Below 60% = F.

Homework

In addition to in-class hands-on learning activities, the teacher must decide whether to include outside homework assignments. The learning activities included in this curriculum guide may be used in a variety of ways to provide both in-class and out-of-class learning experiences for the students. The teacher will need to examine each learning activity to see what materials and equipment are required and then decide if the student has enough mastery to do the work outside of class.

Learning activities involving the microcomputer and the types of hands-on applications included in this curriculum guide present a special case. The teacher may not wish to have students complete work requiring the use of a microcomputer outside of class because of the diversity in hardware and software that may exist. Even though a student may have a personal computer at home, the system may not be compatible with the one used in the classroom. Teachers may be reluctant to have students complete hands-on applications as homework if they feel students have not had sufficient practice or supervision in handling the computer or software.

If students do have access to a personal computer at home, however, there may be more opportunity to assign an extra credit project or activity once the student has mastered basic skills involved with that particular type of application. One of the purposes of encouraging homework is to get the student more involved with the computer and more interested in attempting simple applications.

The teacher should keep in mind the question about copyrighted software when assigning homework requiring the use of the home computer. The teacher should check very carefully the licensing agreements for the software being used in school to be sure that no particular agreement is violated. Some computer software may only be used with a particular computer; other software may be used on any compatible computer. The teacher may find it very uncomfortable to "loan out" computer software to be used in the home. It may be a good idea to have the students fill out a survey form at the beginning of the semester, indicating whether there is a computer at home and identifying the types of software available for use.

This course will give the teacher numerous opportunities to demonstrate correct methods to use in solving particular business problems through the use of selected computer applications. Classtime will need to be divided into presentation time, review time and hands-on time. Assigning some learning activities as homework may permit the teacher to move through the content at a faster pace, with the students having the added advantage of a variety of learning strategies.

At the ninth- and tenth-grade levels, the amount of homework assigned needs to be balanced with the hands-on applications completed during the class sessions. Actual use of the computer for the applications should encourage students to want to learn more about the computer, even if this requires some outside homework activities.

Suggestions for Handling Individual Differences

Keyboarding skill: One of the first things the teacher might notice is the difference in keyboarding skill exhibited by the students. A prerequisite for this course should be at least one semester of keyboarding or typewriting, preferably on microcomputers. This would give students at least the basic 30 words per minute necessary to handle the keyboard with some proficiency.

Even for students who have completed at least one semester of keyboarding or typewriting, there will be differences in the speed and accuracy of the keying in of text or data. The teacher may want to consider optional exercises, limiting those students who have particular difficulty in keying in text or data to shorter exercises, etc. The teacher can be instrumental in emphasizing to the students the importance of having enough skill to feel at ease with a keyboard, to enter text or data with some degree of speed, and to be as accurate as possible so that editing is kept to a minimum.

Quantity of work produced: Individual differences in the speed of production will exist. The teacher will need to examine the ability level of each student to determine equitable workloads. Perhaps different "tracks" of work can be developed for different ability levels within the class. At this point, perhaps "quality" of work produced should outweigh "quantity." Students who can perform the hands-on operations with ease likely will be able to do better on both types of assignments.

One idea might be to assign different learning activities so that each student does not have to complete all of the activities. In other words, different sets of learning activities might be developed to make a more individualized approach possible.

Attitudes exhibited: The teacher should look for different attitudes expressed by the students. Some will enjoy working with the hardware and software, while others may be fearful and extremely hesitant about the technology. Emphasis during the course should be on acquainting the student with hardware, software and applications whether or not the student will be advancing to more sophisticated instruction later in the high school or college program. Students need to be encouraged to "explore" at this level, not to make definite commitments to the computer or business as a career at this time.

Special Topics

The teacher should always check the licensing agreement(s) for the computer software to be used. Depending upon the agreement(s) in force or the way in which the software was purchased, some of the different ways in which the software may legally be used in the classroom are:

1. The software may be licensed for a particular computer used in the classroom. This means that the software cannot legally be used on any other equipment.

2. The software may be part of an instructional program (text/workbook plus software) and can be used on any compatible hardware available in your classroom.
3. The software may need to be used only in the classroom and cannot be copied for home use by students or loaned out to students to be used on a home computer.
4. The software may be limited as to the number of copies that can be made of the software disks.
5. The software may be unlimited as to the number of copies that can be made of the software disks, as long as it is used only for classroom use.

Other variations of these options may exist, but the teacher should check the licensing agreement(s) carefully to see what the legal limits are for the software being used.

Many times teachers are reluctant to pay full commercial price for software because the school budget is limited. Educational software is available from most commercial publishers or other suppliers. The teacher should look for educational software directories which will give the school the opportunity to purchase business software at much lower rates. Most educational software packages are limited as far as basic functions are concerned; however, in the high school program the teacher may find those functions to be quite adequate for the applications desired.

The best way to teach this course is to have a classroom or laboratory with one computer available for each student in the class. This would provide the optimum in hands-on experience with hardware and software during class time. However, another solution would be to group the students into pairs so that they could work together on some of the hands-on activities. Teachers should investigate the policies of the school district in regard to the acquisition of adequate computer facilities for a class of this type. Perhaps computers could be shared with other departments in the school, since this is a course offered at the ninth- or tenth-grade levels that would interest any student in the school prior to making an initial career decision.

Career Opportunities and Information

This course in computer software applications affords the ninth- or tenth-grade student an excellent opportunity to explore the types of business problems that are solved with the use of a computer and compatible software programs. Career information is an important part of the knowledge to be acquired by the students, too. Many of the learning activities included in this curriculum guide require the students to obtain information about career opportunities within the community through reading newspapers and magazines or interviewing business people.

The teacher can do much to supplement the selected learning activities by inviting business people to be guest speakers or "mentors" for the students in the class. Additional career information can be obtained through vocational guidance systems available through school counseling offices or such publications as the Occupational Outlook Handbook.

Every attempt should be made to infuse career information into this course wherever appropriate. The course is designed for the student who has not yet decided whether a business occupation/career is his/her choice. By the time the student enters eleventh- or twelfth-grade, a closer identification with business careers should be emphasized.

Course Evaluation Ideas

A number of ideas which teachers may find helpful in evaluating student progress in the computer software applications course are:

1. Included in the "Teacher References" section are numerous software packages available to assist the teacher in keeping a gradebook or record of student progress. The teacher could develop a computerized system of keeping grade records for the students and use this as a demonstration for the students as well. Many teachers have found that the speed with which they can provide feedback to the students or prepare periodic reports is phenomenal.

2. Textbooks typically are correlated with teachers' manuals. The manuals include evaluation suggestions as well as sample test items for particular units. The teacher may find it helpful to include some of the test items in quizzes or exams, supplementing them with teacher-developed items, to adequately cover the material.

3. Evaluation of student progress should involve a variety of strategies. The primary focus of this course is hands-on applications; therefore, a percentage of the student's grade should be on application performance (see grading policies). Remember that some students may have an aversion to tests! A variety of learning strategies will not only help these students become more acclimated to test-taking but will also provide opportunities for them to excel in other phases of the course.

4. Evaluation of student work habits and attitudes should not be neglected, although this tends to be somewhat subjective. Students should be observed closely as they work with the hands-on activities to see how they interface with the equipment and software. If students are required to work in

"committees" of two or three people, observation can be made of leadership and other cooperative skills demonstrated. The teacher should stress the importance of developing appropriate business attitudes toward the computer and ways in which it can be used in business.

GLOSSARY

BOILERPLATE: Phrases, sentences or paragraph(s) that are saved on disk for recalling into other work to avoid rekeying of the information.

BLOCKS: Phrases, sentences or paragraph(s) that are marked for moving, deleting or copying in text.

CENTERING: The automatic centering that positions text--word(s), line(s), sentence(s) or paragraph(s)--within the margin setting.

CELLS: The column and line number on a spreadsheet.

CODES: The instructions that the application software recognizes to perform specific activities, such as centering, boldface, underlining, etc.

CODING: The process of placing codes within a document to perform specific activities. (See CODES)

DOCUMENT: Text that has been keyed in and later saved on a disk. Usually each document is saved on a disk under a specific name.

ELECTRONIC BULLETIN BOARD: Computer message center that allows any computer to send information to another and that will leave a message in the second computer. The message may also be sent to a number of other computers that are connected.

FIELD: A group of characters that are treated as one piece of information.

FIND(ING): An automatic function that allows the operator to find specific word(s) or phrase(s) within text. This function is usually used to find misspellings, capitalization errors or incorrect wording.

FOOTERS: Information that is repeated on the same line at the bottom of a page throughout a document when it is printed, such as a page number.

FORMAT: Preparing a new or used disk to store documents (when preparing data disks for storage) or setting margins, line spacing and tabs to create the set up of a document (word processing).

FORMATTING: The process of preparing a data disk for storage (readying disks) or the process of preparing the set up of a document (word processing).

FUNCTION: The operation that the application software performs, such as moving blocks of material, printing, saving, deleting, etc.

HEADERS: Information that is automatically placed at the top of each page of a document during printing, such as date, page number, titles, etc.

HELP COMMANDS: Messages the operator will see on the screen that show the codes/keys to press to perform specific functions.

INITIALIZING: The preparation of a new or used data disk to accept new material for storage. (See FORMAT)

INSERT(ION): Characters, word(s), sentence(s), paragraph(s) or page(s) added after the text has been keyed into a document. This function may be used with functions like moving, copying, etc.

JUMP COMMAND: A function that allows the operator to quickly move (jump) to a different location in text.

JUSTIFYING: The process of printing text with even (flush) left and right margins. Extra spaces are automatically placed within each line of text to print the text flush right.

LOG-OFF: A code used by an operator to end the communication during a telecommunications application.

LOG-ON: A code used by an operator to start the communication during a telecommunications application.

MERGE: The process of combining two or more documents into one document for printing, such as form letters, a letter with a spreadsheet, etc.

MOVE: The function that allows the operator to change the location of text from one location to another location within the same document or between documents.

NETWORKING: Connecting electronic equipment (computer and peripherals) that are physically located in different places.

PAGINATION: The division of multi-page documents at specific lines automatically or manually.

PROMPTS: A short message that appears on the screen to help the operator perform various steps in an operation.

RECALL: Bringing back a document that has been saved on disk into computer memory and up on the screen or bringing back a document onto the screen that is still in computer memory.

RECORD: A separate piece of information within a data base document that contains related material, such as a name and address.

REFORMAT: An operation that allows used disks from other computer systems to be prepared for accepting storage when used with a different software package. When the term is used in word processing, it means to change the margin settings, line spacing, tabs, etc.

REKEYING: The repeat typing of material that previously was typed into a document.

REPLACE: A function usually used with the find function to change spelling or capitalization.

REPLICATE: Duplication of material that is already in a document.

RETRIEVE: (See RECALL)

SEARCH: (See FIND)

SPLIT WINDOW: A function that allows the operator to view on the screen two separate sections of information.

SUBSCRIPTS: Characters that are printed below the printed line such as H_2O.

SUPERSCRIPTS: Characters that are printed above the printed line such as 2^2.

SORT: A function in data base that allows the operator to change the location of records into alphabetical or numerical order.

TEXT: Material that has been keyed in and appears on the screen or stored on the disk.

UPDATE FILES: Corrections, changes, additions and deletions within a document are keyed in and saved on the disk under the same name as the document was originally saved.

WIDOWING: A single last line of a paragraph placed at the top of the next page or a single first line of a paragraph on the bottom of a page.

WINDOWING: (See SPLIT WINDOW)

WORD WRAP (WRAPAROUND): A word that is too long to fit into the remaining space of the line automatically taken to the next line.

UNIT A: THE COMPUTER AND ITS CAPABILITIES

UNIT PLAN

Overview of Unit

The following activities are designed to give students a better understanding of the computer and its capabilities. The outline for Unit A suggests the areas that should be covered but in no way should restrict the teacher. Sections may be added, deleted or revised as deemed necessary. The activities marked with an asterisk are required to give students a sound understanding of the computer and its capabilities. The remaining activities are optional activities and should be used as time permits. The activities alone will not adequately meet the objectives of the unit.

Topical Outline of Unit

THE COMPUTER AND ITS CAPABILITIES

1. Value of Computers
    a. Why they are used
    b. What they can/cannot do
        *Activity #1
        *Activity #2
    c. How they benefit/hinder society
        *Activity #3

2. Status and Uses of Computers
    a. Past
        *Activity #4
    b. Present
    c. Future
        *Activity #5
    d. Applications
        *Activity #6

3. Common Computer Terminology
        *Activity #7
    a. Importance
    b. Definitions
    c. Acronyms
        *Activity #8
        Activity #9

4. Computer Careers and Training
    a. Major career areas
       Activity #10
    b. Specific careers
       *Activity #11
    c. Training institutions
       *Activity #12

5. Information Processing Cycle
    a. Recording
    b. Coding
    c. Sorting
    d. Calculating
    e. Summarizing
    f. Communicating
    g. Storing
    h. Retrieving
       Activity #13
       Activity #14

6. Microcomputers
    a. Basic components
       Activity #15
    b. Function of components
       Activity #16
    c. Major features
       Activity #17

7. Buying a Microcomputer
    a. Intended uses
    b. Comparing computers
    c. Available features
    d. Available peripherals
       Activity #18
       Activity #19

Unit Objectives

After completing the learning activities for this unit, the student will be able to respond to related test questions with 80% accuracy. Specifically, the student will be able to

1. Give at least four reasons why businesses use computers.
2. Name at least five things a computer can do and at least three things it cannot do.
3. List at least four ways computers benefit us and at least four ways they hinder us.
4. Describe how individuals viewed the potential of computers before 1975.
5. Develop some insights concerning the future of computers.

6. List at least eight ways computers are being used today.
7. Define accurately 27 out of 30 common computer terms.
8. Explain for a specific computer career the duties, education, salary, advantages and disadvantages of that career.
9. Describe the major differences among technical schools, junior colleges and universities and the training they provide for computer careers.
10. List and explain the eight steps of the data processing cycle with 100% accuracy.
11. Identify and explain the function of at least five major components of a microcomputer system.
12. Explain the advantages and disadvantages of buying a computer by mail order compared to buying it locally.

SUGGESTED STUDENT ACTIVITIES

Activity Name: Value of Computers Discussion A-1
Unit Objectives 1 and 2

Suggested Use of Activity

This activity is intended for use with all students.

Objectives of Activity

Upon the conclusion of this activity, students should have a better understanding of the value and place of computers in our society.

Facilities or Materials Needed

Chalkboard or overhead
Value of Computers Discussion Questions worksheet

Description of Activity

This activity is intended as a class discussion. Students can gain a lot by sharing ideas with their classmates. To facilitate the discussion, some discussion questions are included as part of this activity.

Suggested Length of Activity

Approximately 30 to 40 minutes

Suggestions for Teacher

The list of discussion questions is meant as a starting point for the classroom discussion. The teacher should feel free to add additional questions.

Suggestions for Evaluation

This activity is not designed as a graded activity. It is recommended that the teacher involve all students in the discussion. If evaluation is desired, the discussion could be followed up with a quiz the next day.

Name_______________________

ACTIVITY A-1: VALUE OF COMPUTERS DISCUSSION QUESTIONS

1. What kinds of things are computers being used for today?

2. In what ways have computers touched your life so far today?

3. There are some people who have a fear of computers. Why do you suppose they fear computers?

4. What kinds of complaints have you heard people make about computers? What is your reaction to these complaints?

5. How have you used computers in your other courses? How have you used computers for personal use?

6. What are some of the reasons why computers have become so popular in the business community?

7. Is there anything a computer cannot do? Explain.

Name________________________

ACTIVITY A-1: VALUE OF COMPUTERS DISCUSSION QUESTIONS
(Continued)

8. Some individuals have said that a computer course should be a requirement for graduation. Do you agree or disagree with these individuals? Why or why not?

9. A common argument against computers is that they take away jobs. Do you agree or disagree with this argument? Why?

10. Large computers are expensive. If large companies did away with computers, would they then be able to charge less for their goods and services? Please explain.

Activity Name: Value of Computers Interview A-2
Objectives 1 and 2

Suggested Use of Activity

This activity is intended as a homework assignment for all students.

Objectives of Activity

Upon completion of this activity, students should have a better understanding of how others view computers.

Facilities or Materials Needed

Value of Computers Interview worksheet
Pen or pencil

Description of Activity

This activity should begin with the teacher reviewing the questions on the interview sheet so students understand how to work with the form. Students should then be instructed to interview a parent, an older brother or sister, a relative or a neighbor. Interview forms should be returned the following day.

Suggested Length of Activity

The teacher should allow 5 to 10 minutes of class time for explaining and reviewing the interview form. The actual interview should also take 5 to 10 minutes.

Suggestions for Teacher

The teacher may want to have the class prepare a summary report using the completed interview forms. The class could tally the responses and prepare charts and graphs of the results to be shared with the rest of the class.

Suggestions for Evaluation

To make sure the interview is conducted properly, it is recommended that the interview sheets not be graded; otherwise, a student may complete the interview sheet with the responses he/she thinks the teacher wants. If evaluation is deemed necessary, the teacher may assign points based on whether or not the assignment has been properly completed.

Name ______________________________

ACTIVITY A-2: VALUE OF COMPUTERS INTERVIEW

Interview conducted by ______________________________

Person interviewed: ______________________________

Age: Under 20 20-29 30-39 40-49 50-59 60 and over

Do you own a computer? Yes No

Have you attended a college or university? Yes No

Have you taken a course about computers? Yes No

If No:

Would you like to take a course about them? Yes No

Do you think such a course would be difficult? Yes No

What is your occupation? ______________________________

Have you ever had to use a computer on your job? Yes No

Do you think a computer may some day take over your job? Yes No

Do you think all high school students should take a course about computers? Yes No

Do you think computers are a blessing or a curse? Blessing Curse
Why?

Activity Name: Value of Computers Small Group Discussion A-3
Objective 3

Suggested Use of Activity

This activity should be used by the teacher to get all students involved in thinking about how computers affect our lives. It is recommended that this be a small group activity.

Objectives of Activity

Each group should be able to develop in 15 minutes a list of at least four ways that computers benefit us and four ways they hinder us.

Facilities or Materials Needed

Notebook paper
Pen or pencil
Overhead or chalkboard

Description of Activity

The teacher should provide a brief introduction to the topic, "The Value of Computers." Following this introduction the teacher should divide the class into groups of three to five students. Each group should make a list of the ways in which computers benefit us and the ways they hinder us. After approximately 15 minutes of group discussion, the class should be reassembled. A master list should then be prepared on the overhead or chalkboard. The remainder of the class period should be spent discussing the items listed, concentrating on any misconceptions or common myths included in the list.

Suggested Length of Activity

A 50-minute class period

Suggestions for Teacher

This activity could be handled as a class discussion. However, as often happens when this is done, a limited number of students take part in the discussion. The group activity would increase the number of students who participate.

Suggestions for Evaluation

The teacher may want to follow up this activity with a short quiz the following day.

Activity Name: Status of Computers Report A-4
Objective 4

Suggested Use of Activity

This activity is recommended in order to make students aware of the rapid pace at which computers have advanced over the years.

Objectives of Activity

The student should be able to prepare in one class period a short report (one-half to one page) about how computers were viewed in the past in regard to their future. The purpose of this activity is to make students aware of how rapidly computers have advanced.

Facilities or Materials Needed

Notebook paper
Pen or pencil
Reader's Guide to Periodical Literature
Magazines, textbooks and filmstrips from before 1975

Description of Activity

1. Prepare a short report (one-half to one page) about a magazine article which predicts the future of computers.
2. Use the resources of your school learning center. Select magazine articles that were printed before 1975.
3. You are trying to determine how individuals at that time viewed the future of the computer.
4. Your report should include specific statements the article contained in reference to computers in the future.
5. End your report with a short paragraph where you give your reaction to the statements and predictions made in the article.

Suggested Length of Activity

Allow one class period, preferably in the learning resource center, for completion of this activity.

Suggestions for Teacher

To save time the teacher may want to prepare a list of magazine articles in advance. When doing this, students can quickly locate an article and begin writing the report; otherwise, some students may use the entire class period searching through the Reader's Guide.

Suggestions for Evaluation

These reports should be evaluated on the point system with a set number of points assigned to the report from the magazine article and a set number of points assigned to the student's reaction paragraph.

Activity Name: Theme on Future A-5
Objective 5

Suggested Use of Activity

This activity is intended for all students and should be used at the conclusion of this topic.

Objectives of Activity

Students should be able to write at least a half-page report in 20 minutes on what he/she envisions the future will be like with the continued advancement of computers.

Facilities or Materials Needed

Notebook paper
Pen or pencil

Description of Activity

At the conclusion of the discussion of the topic, "Status and Uses of Computers," students should be instructed to write impromptu themes of approximately one-half page on what they think the future will be like with the continued advancement of computers. To get students started, the following titles could be placed on the chalkboard.

Computer of the Future
Computers in the Year 2000
Life in the Year 2000
How I See the Future
Future Use of Computers

Students should be instructed to concentrate on getting their ideas down on paper, even at the expense of proper grammar, punctuation, etc.

Suggested Length of Activity

A 50-minute period including discussion and time spent giving instructions to the class is necessary for this activity.

Suggestions for Teacher

The teacher might list on the chalkboard several of the proposed topics from which the students may choose. However, some students have a hard time choosing and would probably take too much time deciding on which topic to write. The teacher might want to read or have students read the more interesting themes to the class. After completion of the word processing unit, this exercise might lend itself to a computer writing assignment.

Suggestions for Evaluation

In order not to stifle creativity, these themes should not be graded on grammar, spelling, punctuation, etc., but instead should be given points based on how well the students completed the criteria of the assignment. This should be explained to the students before they begin writing so they are free to think creatively. If the teacher so desires, students could be given the last half of the class period to rewrite, concentrating on grammar, spelling, punctuation, etc.

Activity Name: Status and Uses of Computers Discussion A-6
Objective 6

Suggested Use of Activity

This is a group activity intended for all students. Its purpose is to make students aware of the various applications of computers.

Objectives of Activity

Each group should be able to develop in 10 to 15 minutes a list of at least eight ways computers are being used today.

Facilities or Materials Needed

Notebook paper
Pen or pencil
Overhead or chalkboard

Description of Activity

The teacher should provide a brief introduction to the topic, "Status and Uses of Computers." Following this introduction the teacher should divide the class into groups of three to five students. Each group should make a list of the ways computers are being used today. After 10 to 15 minutes of group discussion, the class should be reassembled and a master list of computer applications should then be prepared on the overhead or chalkboard. The remainder of the class period should be spent adding additional items to the list and then discussing the items on the list.

Suggested Length of Activity

A 50-minute class period

Suggestions for Teacher

This activity could be handled as a class discussion. However, the group activity should get more students involved in the discussion.

Suggestions for Evaluation

It is not intended that the group activity be graded. The teacher may want to follow up this activity with a short quiz the following day.

Activity Name: Common Computer Terminology Word Search A-7
Objective 7

Suggested Use of Activity

This activity is intended to be used as a pre-test to determine how familiar students are with common computer terminology. It could also be used as seatwork or homework after the terms have been presented.

Objectives of Activity

The student should be able to find ten computer terms in the word search puzzle in 20 minutes.

Facilities or Materials Needed

Computer Terms Word Search handout
Pen, pencil or marker

Description of Activity

Follow the instruction on the word search activity sheet handout.

Suggested Length of Activity

Approximately 20 minutes

Suggestions for Teacher

The teacher should encourage the students to make a list of computer terms they have heard and then see if such terms are located in the word search puzzle.

Suggestions for Evaluation

Because this is intended as a pre-test assignment, this activity should not be graded. Score the activity by simply indicating the number of terms found. This will indicate the student's level of background knowledge about computers. A second copy of the word search appears as the key along with an alphabetical listing of the 30 terms. The teacher may want to develop a scoring system similar to the following:

25 or more = Human Computer!!
20 to 24 = Computer Whiz
15 to 19 = You have great potential
10 to 14 = Way to Go!!
5 to 9 = Maybe you need glasses
below 5 = You must have been sleeping!

Name____________________________

ACTIVITY A-7: COMPUTER TERMS WORD SEARCH

a. There are 30 computer terms in the following word search. See how many you can find.

b. Words may be across, down, and diagonally and may be either written forward or backward.

c. Circle each word you find. COMPUTER is given as an example. It is not one of the 30 words.

D	I	S	K	D	R	I	V	E	M	A	V	L	I	M	O	U	S	E	D
E	R	U	O	C	A	Y	T	T	I	Z	L	C	T	M	D	B	D	K	A
R	U	M	A	E	M	G	L	G	C	K	F	L	O	W	C	H	A	R	T
A	T	Q	J	E	L	I	E	R	R	T	Y	N	C	A	E	M	F	B	A
W	R	C	O	K	L	R	M	T	O	X	I	D	B	L	D	I	T	M	C
D	E	L	Y	I	A	M	C	W	C	T	V	E	U	J	Q	C	S	L	F
R	E	N	S	W	F	P	P	O	O	D	L	A	N	I	M	R	E	T	E
A	B	C	T	R	F	L	U	R	M	L	Y	M	O	U	C	O	L	N	Y
H	A	F	I	L	S	U	H	N	P	P	O	B	C	G	T	P	T	C	G
X	O	V	C	C	R	W	Q	D	U	I	U	Y	R	D	B	R	M	O	A
S	K	R	K	L	M	Z	K	M	T	P	J	T	Q	E	C	O	F	H	G
Y	B	B	X	S	K	V	Z	E	E	E	W	E	E	G	P	C	N	O	N
C	R	T	D	I	E	A	U	M	R	J	N	H	L	R	F	E	M	E	I
R	S	Y	Q	K	Y	F	L	O	P	P	Y	D	I	S	K	S	M	O	R
Y	R	A	N	I	B	U	W	R	X	I	D	Y	P	Z	F	S	E	G	A
T	K	N	V	J	O	C	O	Y	I	B	P	R	I	N	T	O	U	T	H
O	R	X	M	P	A	G	W	Q	S	B	U	Y	D	T	M	R	E	H	S
L	P	R	O	G	R	A	M	M	E	R	C	V	I	O	Z	A	G	A	E
S	K	G	V	A	D	M	R	H	L	J	Q	M	D	G	N	F	I	B	M
W	H	T	M	F	U	C	O	N	S	O	L	E	Y	C	O	E	G	Z	I
B	A	S	I	C	J	A	I	X	K	P	M	T	U	P	T	U	O	D	T

ACTIVITY A-7: COMPUTER TERMS WORD SEARCH
(TEACHER'S COPY)

COMPUTER TERMS WORD SEARCH

a. There are 30 computer terms in the following word search. See how many you can find.

b. Words may be across, down, and diagonally and may be either written forward or backward.

c. Circle each word you find. COMPUTER is given as an example. It is not one of the 30 words.

```
D I S K D R I V E M A V L I M O U S E D
E R U O C A Y T T I Z L C T M D B D K A
R U M A E M G L G C K F L O W C H A R T
A T Q J E L I E R R T Y N C A E M F B A
W R C O K L R M T O X I D B L D I T M C
D E L Y I A M C W C T V E U J Q C S L F
R E N S W F P P O O D L A N I M R E T E
A B C T R F L U R M L Y M O U C O L N Y
H A F I L S U H N P P O B C G T P T C G
X O V C C R W Q D U I U Y R D B R M O A
S K R K L M Z K M T P J T Q E C O F H G
Y B B X S K V Z E E E W E E G P C N O N
C R T D I E A U M R J N H L R F E M E I
R S Y Q K Y F L O P P Y D I S K S M O R
Y R A N I B U W R X I D Y P Z F S E G A
T K N V J O C O Y I B P R I N T O U T H
O R X M P A G W Q S B U Y D T M R E H S
L P R O G R A M M E R C V I O Z A G A E
S K G V A D M R H L J Q M D G N F I B M
W H T M F U C O N S O L E Y C O E G Z I
B A S I C J A I X K P M T U P T U O D T
```

1. basic
2. binary
3. byte
4. console
5. CPU
6. CRT
7. data
8. disk drive
9. floppy disks
10. flow chart
11. GIGO
12. Hardware
13. joystick
14. keyboard
15. memory
16. microcomputer
17. microprocessor
18. modem
19. monitor
20. mouse
21. OCR
22. output
23. printout
24. programs
25. programmer
26. RAM
27. ROM
28. software
29. terminal
30. time sharing

Activity Name: Common Computer Terminology A-8
Objective 7

Suggested Use of Activity

This activity should be completed by all students.

Objectives of Activity

The student should be able to look up and define the list of 30 computer terms with 90% accuracy within 45 minutes, using class notes and other reference materials.

Facilities or Materials Needed

Computer Terms worksheet
Pen or pencil
Class notes and/or reference materials

Description of Activity

In this activity the student is to define 30 common computer terms using the computer term handout.

Suggested Length of Activity

A 50-minute class period

Suggestions for Teacher

The teacher should remind the students that most reference materials have a glossary in the back that will help them in defining the terms in this activity.

Suggestions for Evaluation

The assignment might be evaluated by assigning one or two points for each term correctly defined.

Name__________________________

ACTIVITY A-8: COMPUTER TERMS

DIRECTIONS: Write out the definition of each of the following terms, using your notes and other reference materials.

1. COMPUTER:
2. DATA:
3. HARDWARE:
4. DIGITAL COMPUTER:
5. BASIC:
6. MICROCOMPUTER:
7. ON-LINE:
8. CENTRAL PROCESSING UNIT (CPU):
9. ROM:
10. PROGRAM:
11. BINARY:

Name____________________________

ACTIVITY A-8: COMPUTER TERMS
(Continued)

12. OUTPUT:

13. SOFTWARE:

14. FLOPPY DISK:

15. MICROPROCESSOR:

16. MEMORY:

17. PROGRAMMER:

18. RANDOM ACCESS:

19. FLOW CHART:

20. CONTROL UNIT:

21. MONITOR:

22. RAM:

Name______________________

ACTIVITY A-8: COMPUTER TERMS
(Continued)

23. ADDRESS:

24. BYTE:

25. HARD COPY:

26. TIME SHARING:

27. GIGO:

28. ANALOG COMPUTER:

29. CRT:

30. OFF-LINE:

Activity Name: Common Computer Terminology Crossword Puzzle A-9
Objective 7

Suggested Use of Activity

This activity should be used after the computer terminology has been discussed as a means of reinforcing the understanding of computer terminology.

Objectives of Activity

Of the 53 terms in this crossword puzzle, students should be able to correctly complete 34 (65%) of them in 30 minutes.

Facilities or Materials Needed

Computer Crossword Puzzle
Computer Crossword Puzzle Clue Sheets
Pencil
Class notes

Description of Activity

In this activity the student will review the definitions of common computer terminology by completing a computer terms crossword puzzle handout.

Suggested Length of Activity

Approximately 30 minutes

Suggestions for Teacher

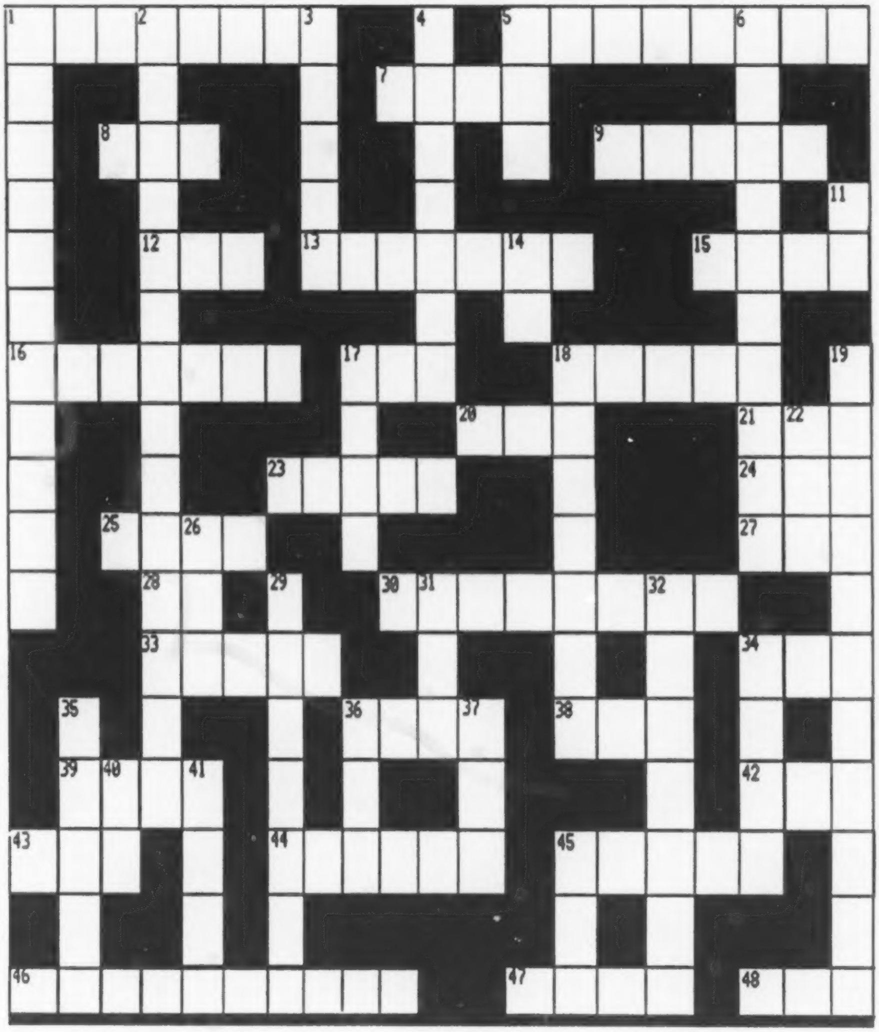
The teacher should encourage the students to use class notes and any related handouts for completing this assignment. Encourage students to go through the puzzle filling in the ones they know and then go back through the puzzle, using their class notes to help in finding the correct computer terms.

Suggestions for Evaluation

The teacher should develop a grading or point scale based on the number of correctly identified terms. The grading scale used should be determined by the ability level of the class. The average student should be able to correctly identify 34 (65%) of the terms in 30 minutes.

Name______________________

ACTIVITY A-9: COMPUTER CROSSWORD PUZZLE


1
2
3
4
5
6
7
8
9
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48

Name___________________________

ACTIVITY A-9: COMPUTER CROSSWORD PUZZLE CLUE SHEET

WORDS ACROSS

1. An input/output device connected to the central unit
5. Computer programs, flowcharts, instruction manuals, etc.
7. Garbage in--garbage out
8. Optical Character Recognition (abbreviation)
9. Programming language used with most personal computers
12. Stored data not available to the computer is referred to as __________-line
13. This part of the computer oversees the operation of the entire computer
15. Slang for a microprocessor
16. Used to identify a specific storage location within computer memory
17. A good friend
18. A special device for controlling the cursor movement
20. Number of symbols in the binary system
21. Number of symbols in the decimal system
23. Information being fed into the computer
24. Their big day is April 15 (abbreviation)
25. One of the symbols in the binary system
27. An abbreviation for the computer screen
28. One of the notes of the musical scale
30. Often used with the computer with game software
33. Intelligent
34. The "brains" of the computer
36. Your equal
38. Command which tells the computer to start a program
39. Refers to printed output; __________ copy
42. Point after touchdown (abbreviation)
43. Very fast airplane
44. Data stored in computer memory is located by _________ access
45. Our country's flag is also known as old __________
46. A person who writes computer programs
47. One storage location within computer memory
48. Our brightest star

81

Name______________________

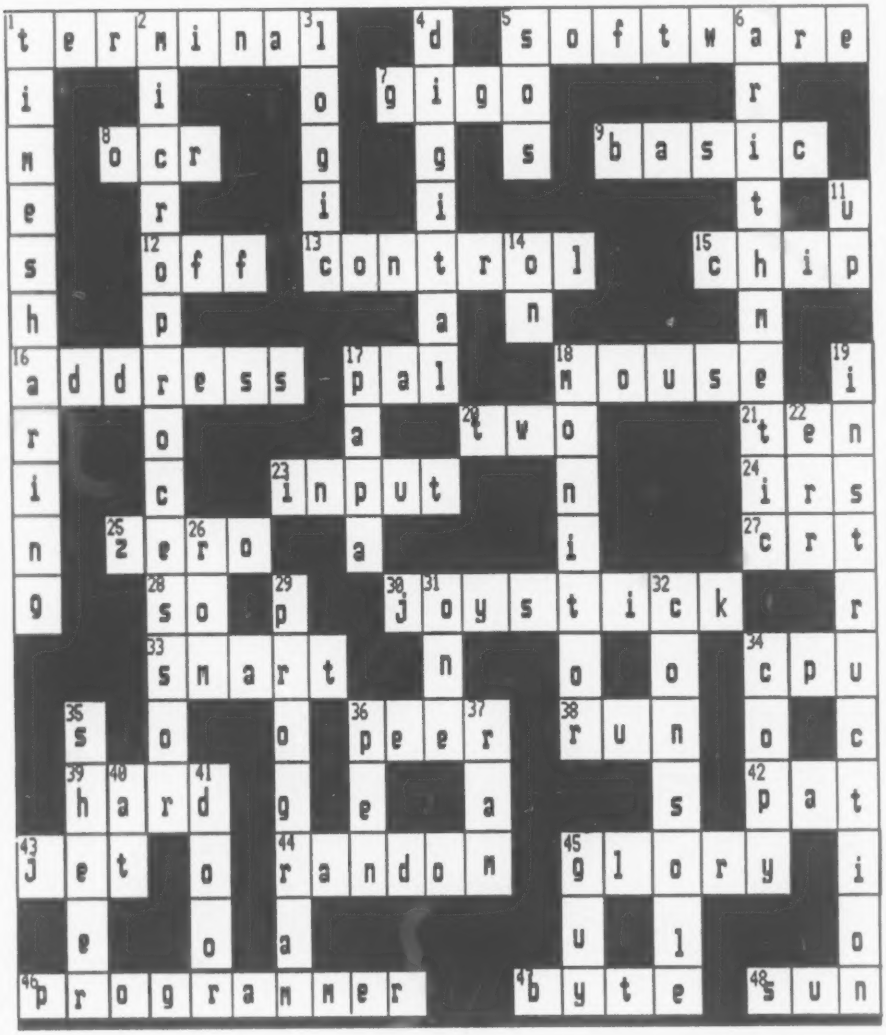
ACTIVITY A-9: COMPUTER CROSSWORD PUZZLE CLUE SHEET
(Continued)

WORDS DOWN

1. The process whereby several users are connected to the same central processing unit.
2. A computer chip containing the control and logic units of a computer.
3. The computer unit which makes decisions.
4. The type of computer used in businesses
5. International signal for help
6. The part of the computer responsible for making decisions.
11. Computer operators get the system ___________ and running
14. When the computer has access to stored data: _______ -line
17. Mama's other half
18. The computer screen
19. A command to the computer making up a line of a computer program
22. To make a mistake
26. That part of the computer memory not availale to the user for storage of data
29. A series of steps followed by a computer to solve a problem
31. One of the symbols of the binary system
32. The part of the computer containing lights, switches, and a typewriter like device
34. To reproduce some data
35. Thin, filmy
36. Slang for prison
37. Computer memory in which the user stores the program and data
40. A preposition
41. An opening into a room
45. Opposite of a gal

Name________________________________

ACTIVITY A-9: COMPUTER CROSSWORD PUZZLE
(TEACHER'S COPY)



Activity Name: Computer Careers and Training Poster A-10
Objective 8

Suggested Use of Activity

This activity should be used to make students aware of the various computer careers available in their geographic area. It is intended as a homework project but could be done as an in-class assignment.

Objectives of Activity

The purpose of this activity is to make students aware of the various computer-related career opportunities available in their geographic area. The students should be able to prepare an attractive display of want ads for computer careers.

Facilities or Materials Needed

Posterboard or typing paper
Pen, pencil or markers
Glue or transparent tape
Newspaper Classified Ad section
Scissors
Ruler
Stencil lettering guides

Description of Activity

The teacher should instruct the students to

1. Prepare a poster on posterboard or typing paper of want ads for computer careers found in newspapers from their local area.
2. Prepare an appropriate heading for the poster.

Suggested Length of Activity

Students should be given a couple of days to complete this assignment. It is recommended that the assignment extend over a weekend, as those editions of the newspaper normally contain a larger selection of want ads.

Suggestions for Teacher

The teacher should have on hand some newspapers for the students who may not have access to them. The assignment could be enlarged by having the students group the want ads by major career categories. Students could also be required to list along the bottom of the poster any specific skills or personal qualities mentioned in the want ads. They could also record the number of times these skills and qualities were mentioned.

Suggestions for Evaluation

The posters should be graded based on a minimum number of want ads (for example, 8), neatness and appearance. The listing of skill/ personal qualities mentioned in the above section could be a requirement for an "A" poster grade or could be a requirement for bonus points.

Activity Name: Computer Careers and Training Report A-11
Objective 8

Suggested Use of Activity

All students should be required to research a specific computer career and write a one-page report about it. The teacher may want to take the class to the library or guidance office to provide time to research a career.

Objectives of Activity

The student should be able to prepare a one-page report (handwritten or typed) about a specific career which includes all of the following types of information: common duties, needed schooling, salary and working conditions, advantages, disadvantages and a summary paragraph.

Facilities or Materials Needed

Notebook or typing paper
Pen
Career pamphlets and reference materials
Computer Careers and Training Report worksheet

Description of Activity

The teacher should instruct the students to

1. Prepare a one-page report (typed or handwritten) about some type of computer career.
2. Secure reference materials from the library and/or the school guidance office. Provide a list of three sources used.
3. Include in the report answers to the following types of questions:
    a. What duties are performed by a worker in this career?
    b. What type of education is required?
    c. What salary do these workers earn and what are the normal working conditions?
    d. What are the advantages of this career?
    e. What are the disadvantages of this career?
    f. Would you enjoy this career? Why or why not?

Suggested Length of Activity

Students should be given one class period to do library research and begin writing. An additional day outside of class time to prepare the report in final form should be adequate.

Suggestions for Teacher

The above-average students might also be required to give a short oral report to the class about their career choice. The above-average students might be required to do a two-page report instead of a one-page report. The teacher could prepare a list of careers letting students choose a career, thus avoiding duplication. These reports could be kept on file for student reference; however, this would require that all evaluation comments appear on a separate evaluation form and not on the report itself. These reports could also be used later during the word processing unit. The student could input the report and then make the changes as indicated on the teacher's evaluation report.

Suggestions for Evaluation

Evaluation should be based on all required areas appearing in the report. Of course, spelling, grammar, punctuation and neatness should also be a part of the evaluation but would be a lesser percentage of the final grade. Bonus points could be allowed for a title page with an appropriate design.

Name________________________

ACTIVITY A-11: COMPUTER CAREERS AND TRAINING REPORT

1. Prepare a one-page report (typed or handwritten) about some type of computer career.
2. Secure reference materials from the library and/or the school guidance office. Provide a list of three sources used.
3. Include in the report answers to the following types of questions:
   a. What duties are performed by a worker in this career?
   b. What type of education is required?
   c. What salary do these workers earn and what are the normal working conditions?
   d. What are the advantages of this career?
   e. What are the disadvantages of this career?
   f. Would you enjoy this career? Why or why not?

Activity Name: Computer Careers and Training Comparison A-12
Objective 9

Suggested Use of Activity

This activity should be completed by all students. Its purpose is to make all students aware of the training requirements of various computer careers in order to assist them in making their career decisions.

Objectives of Activity

The student should be able to complete a comparison worksheet for a technical school, a junior college or a university offering a course of study leading to a certificate or degree in a computer career.

Facilities or Materials Needed

Catalogs or brochures from technical schools, junior colleges and universities
Training Comparison worksheets
Pen or pencil

Description of Activity

The teacher should acquaint students with the three major institutions that provide training for computer careers: technical schools, junior colleges and universities. The class should then be taken to the school's guidance office where students would use school catalogs, brochures, etc., to complete the comparison worksheets. A separate worksheet should be used for each of the three levels of institutions with two schools from each level being compared.

Suggested Length of Activity

A 50-minute class period

Suggestions for Teacher

This could be completed as an in-class assignment but would require the teacher to assemble ample copies of school catalogs, brochures, etc. During the activity the teacher should circulate about the room assisting students who have questions. The more advanced students could be given additional worksheets in order to compare several schools or careers at a given level.

Suggestions for Evaluation

This activity is intended to make students aware of the training offered at the various educational levels. Grading should be on a point system based on the completeness of each worksheet. Bonus points could be given for each worksheet completed over the minimum of three schools or careers.

Name________________________

ACTIVITY A-12: TRAINING COMPARISON

Circle one: Technical School Junior College University

Career area: ______________________________

School 1		School 2
	School Name	
____________________		____________________
	Location of School	
____________________		____________________
	Length of Program	
____________________		____________________
	Total Cost	
____________________		____________________
	Number of Required Computer Courses	
____________________		____________________
	Number of Required Non-computer Courses	
____________________		____________________
	Number of Required English Courses	
____________________		____________________

Name__________________________

ACTIVITY A-12: TRAINING COMPARISON
(Continued)

Number of Required Math Courses

______________________________ ______________________________

Number of Required P.E. Courses

______________________________ ______________________________

If you were to attend this level of education institution, which of these two schools would you choose?

School Name: ____

Why?

Activity Name: Information Processing Cycle Introduction A-13
Objective 10

Suggested Use of Activity

This activity is designed as an in-class activity but could also be used as a homework assignment. Its purpose is to increase student understanding of the information processing cycle.

Objectives of Activity

The student should be able to complete the questions on the activity handout in 30 minutes with 80% accuracy.

Facilities or Materials Needed

Information Processing Cycle Introduction worksheet
Pen or pencil
Class notes and/or reference materials

Description of Activity

In this activity you are to complete the handout containing questions about the information processing cycle.

Suggested Length of Activity

Approximately 30 minutes

Suggestions for Teacher

The teacher may want to assist students with this activity by giving them the page numbers in the reference material related to the information processing cycle.

Suggestions for Evaluation

Student papers should be checked to see if the suggested objective has been reached. Points can be awarded for each correct answer.

Name____________________________

ACTIVITY A-13: INFORMATION PROCESSING CYCLE INTRODUCTION

DIRECTIONS: Use appropriate reference materials to complete the questions on this worksheet.

1. The eight steps in the information processing cycle are: Calculating, Coding, Communicating, Recording, Retrieving, Sorting, Storing and Summarizing. List the most likely order data being processed for the first time would flow through the above eight steps.

   1.
   2.
   3.
   4.
   5.
   6.
   7.
   8.

2. List at least four different methods that may be used to record data.

   1.
   2.
   3.
   4.

3. Often information is coded to make working with it easier. For example, each person's name is represented by nine digits using social security numbers. Give five other examples of coding data.

   1.
   2.
   3.
   4.
   5.

4. Give a brief explanation of each operation in the information processing cycle.

   CALCULATING:

   CODING:

Name___________________________

ACTIVITY A-13: INFORMATION PROCESSING CYCLE INTRODUCTION (Continued)

COMMUNICATING:

RECORDING:

RETRIEVING:

SORTING:

STORING:

SUMMARIZING:

5. There are three common ways to sort data: sequencing, grouping and selecting. Explain what each of these means and give examples of each.

SEQUENCING:

GROUPING:

SELECTING:

Activity Name: Information Processing Cycle Matching Questions A-14
Objective 10

Suggested Use of Activity

After the information processing cycle has been discussed, the worksheet on the steps in the information processing cycle should be used as an in-class assignment.

Objectives of Activity

The student should be able to match the 30 activities on the worksheet with the correct information processing operation in 20 minutes with 80% accuracy.

Facilities or Materials Needed

Information Processing Cycle worksheets
Pen or pencil
Class notes or reference materials

Description of Activity

After the teacher has discussed the eight operations in the data processing cycle, students should be given the information processing cycle worksheets to be completed individually. Students should be allowed to use class notes or reference materials.

Suggested Length of Activity

Approximately 20 minutes

Suggestions for Teacher

This assignment could be used as a homework assignment if the teacher prefers. The worksheet could also be used as a quiz.

Suggestions for Evaluation

Points may be assigned based on the number of correct answers. It may be graded either as daily work, homework or a quiz.

Name________________________

ACTIVITY A-14: INFORMATION PROCESSING CYCLE (Continued)

________________ 13. Helping your teacher by putting the completed test papers in order by rows for easy distribution.

________________ 14. Grading a quiz by figuring out the number of points each student received.

________________ 15. Taking a picture of your friends in the school lunchroom.

________________ 16. Throwing your books into your locker at the end of the school day.

________________ 17. Marking student physical education enrollment cards with a big M if it is a male and a big F if it is a female.

________________ 18. Putting onto a disk a computer program you have just keyed into the computer.

________________ 19. Arranging a set of test papers from the highest score to the lowest score.

________________ 20. Using the batting averages of each player on your school team to determine the team's batting average.

________________ 21. Using the telephone directory to look up the phone number of the local pizza parlor.

________________ 22. Taking your baseball card collection and placing the cards in piles according to the teams for which they play.

________________ 23. Calling your best friend to find out if he/she would like to take in a movie.

________________ 24. Loading a program from a disk into computer memory.

________________ 25. Painting a picture of a bowl of fruit in your art class.

Name____________________________

ACTIVITY A-14: INFORMATION PROCESSING CYCLE (Continued)

____________________ 26. Helping out in the school library by picking out all the cards of those students who have overdue books.

____________________ 27. Doing your accounting homework which requires you to find the pay for each employee in XYZ Co.

____________________ 28. Giving a report on insects in your biology class.

____________________ 29. Counting the change from the football concession stand using a device that separates the coins into stacks of like kinds.

____________________ 30. Going through your folder trying to find your homework assignment.

ACTIVITY A-14: INFORMATION PROCESSING CYCLE
(TEACHER'S COPY)

DIRECTIONS: On the blank in front of each activity, write the name of the information processing cycle operation it would come under. The operations are listed alphabetically.

Calculating
Coding
Communicating
Recording
Retrieving
Sorting
Storing
Summarizing

COMMUNICATING 1. Sending data from one location to another.

SORTING 2. Arranging data in a specific order.

CALCULATING 3. Adding, subtracting, multiplying or dividing.

SUMMARIZING 4. Putting data into a concise but meaningful form.

RETRIEVING 5. Searching for a customer's account balance.

RECORDING 6. Writing down the specifics of a customer's order.

CODING 7. Assigning letters, numbers or symbols to data.

STORING 8. The orderly safekeeping of data.

COMMUNICATING 9. Calling a client about a change in the time of his/her appointment.

RECORDING 10. Typing your history report on your microcomputer.

RECORDING 11. Making photocopies of the agenda for the student council meeting.

COMMUNICATING 12. Sending a check for your school pictures to the photography company.

ACTIVITY A-14: INFORMATION PROCESSING CYCLE
(TEACHER'S COPY)
(Continued)

SORTING 13. Helping your teacher by putting the completed test papers in order by rows for easy distribution.

CALCULATING 14. Grading a quiz by figuring out the number of points each student received.

RECORDING 15. Taking a picture of your friends in the school lunchroom.

STORING 16. Throwing your books into your locker at the end of the school day.

CODING 17. Marking student physical education enrollment cards with a big M if it is a male and a big F if it is a female.

STORING 18. Putting onto a disk a computer program you have just keyed into the computer.

SORTING 19. Arranging a set of test papers from the highest score to the lowest score.

SUMMARIZING or CALCULATING 20. Using the batting averages of each player on your school team to determine the team's batting average.

RETRIEVING 21. Using the telephone directory to look up the phone number of the local pizza parlor.

SORTING 22. Taking your baseball card collection and placing the cards in piles according to the teams for which they play.

COMMUNICATING 23. Calling your best friend to find out if he/she would like to take in a movie.

RETRIEVING 24. Loading a program from a disk into computer memory.

RECORDING 25. Painting a picture of a bowl of fruit in your art class.

ACTIVITY A-14: INFORMATION PROCESSING CYCLE
(TEACHER'S COPY)
(Continued)

SORTING 26. Helping out in the school library by picking out all the cards of those students who have overdue books.

CALCULATING 27. Doing your accounting homework which requires you to find the pay for each employee in XYZ Co.

COMMUNICATING 28. Giving a report on insects in your biology class.

SORTING 29. Counting the change from the football concession stand using a device that separates the coins into stacks of like kinds.

RETRIEVING 30. Going through your folder trying to find your homework assignment.

Activity Name: Microcomputers Poster A-15
Objective 11

Suggested Use of Activity

This activity is intended as an out-of-class project. Students should be given several days to complete the project.

Objectives of Activity

The student should be able to prepare a poster which includes at least five of the major components and/or peripherals of a microcomputer as well as identifying and explaining the function of each.

Facilities or Materials Needed

Posterboard or typing paper
Pen, pencil or markers
Magazines, newspapers and advertising brochures
Scissors
Glue or transparent tape
Ruler
Stencil lettering guides

Description of Activity

The teacher should give the students the following information about this assignment.

1. Prepare a poster on posterboard or typing paper of the major components and peripherals (include at least five) that make up a microcomputer system.
2. Your poster should have a heading.
3. Either cut out pictures of the components or draw them.
4. Label each component and include a brief explanation of its purpose.

Suggested Length of Activity

Students should be given a minimum of two days to complete this homework assignment.

Suggestions for Teacher

The teacher should have available some magazines, newspapers and advertising brochures for students who may not have access to them.

Suggestions for Evaluation

Posters should be evaluated based on whether the basic requirements--minimum of five components/peripherals, headings, explanations--are included. Points can be awarded for each of the above as well as for originality, neatness, attractiveness, etc. Bonus points could be given for components included beyond the five minimum.

Activity Name: Microcomputer Components A-16
Objective 11

Suggested Use of Activity

This activity is for all students and should be used after the major components of a computer system have been discussed.

Objectives of Activity

The student should be able to complete the 20 items on the worksheet in 15 minutes with 85% accuracy.

Facilities or Materials Needed

Microcomputer Components worksheet
Pen or pencil
Class notes and/or reference materials

Description of Activity

The teacher should discuss with the class the basic components of a microcomputer system. At the conclusion of the discussion, the Microcomputer Component worksheet should be distributed for the students to complete individually. Use of class notes and reference materials should be allowed.

Suggested Length of Activity

Approximately 15 minutes

Suggestions for Teacher

The Microcomputer Component worksheet could be used either as a homework assignment or as a quiz on this section of the unit.

Suggestions for Evaluation

If the worksheet is used as seatwork or homework, the teacher could grade these by assigning point values or could follow up the activity with a quiz.

Name________________________

ACTIVITY A-16: MICROCOMPUTER COMPONENTS

DIRECTIONS: Listed in alphabetical order below are the six major parts or components of a computer system. On the blank in front of each statement, write the name of the computer part or component responsible for that operation.

CPU
Disk Drive
Keyboard
Monitor
Mouse
Printer

____________________ 1. Used for inputting a program you have just written into the computer.

____________________ 2. Makes moving the cursor much easier.

____________________ 3. Lets you view what you have just typed in.

____________________ 4. Responsible for making all calculations.

____________________ 5. Also known as the CRT.

____________________ 6. Comes in both tractor and friction versions.

____________________ 7. This is the "brains" of the computer system.

____________________ 8. Used to store a program so you can use it again at a later time.

____________________ 9. Often used with a word processing program to make selecting options easier.

____________________ 10. Produces output known as hardcopy.

____________________ 11. The means used for first-time input.

____________________ 12. A TV could be used in place of this computer component.

____________________ 13. Device used to load commercially prepared software.

Name__________________________

ACTIVITY A-16: MICROCOMPUTER COMPONENTS
(Continued)

__________________ 14. This computer component is responsible for making logic decisions.

__________________ 15. Replaces the keyboard for certain input functions.

__________________ 16. This input device would be an optional part of many computer systems.

__________________ 17. Two of these make working with some software packages easier.

__________________ 18. Sometimes the CPU and this device are manufactured as one unit.

__________________ 19. Dot matrix is the most common type.

__________________ 20. Loses any stored data or programs when the system is turned off.

ACTIVITY A-16: MICROCOMPUTER COMPONENTS
(TEACHER'S COPY)

DIRECTIONS: Listed in alphabetical order below are the six major parts or components of a computer system. On the blank in front of each statement, write the name of the computer part or component responsible for that operation.

CPU
Disk Drive
Keyboard
Monitor
Mouse
Printer

KEYBOARD 1. Used for inputting a program you have just written into the computer.

MOUSE 2. Makes moving the cursor much easier.

MONITOR 3. Lets you view what you have just typed in.

CPU 4. Responsible for making all calculations.

MONITOR 5. Also known as the CRT.

PRINTER 6. Comes in both tractor and friction versions.

CPU 7. This is the "brains" of the computer system.

DISK DRIVE 8. Used to store a program so you can use it again at a later time.

MOUSE 9. Often used with a word processing program to make selecting options easier.

PRINTER 10. Produces output known as hardcopy.

KEYBOARD 11. The means used for first-time input.

MONITOR 12. A TV could be used in place of this computer component.

DISK DRIVE 13. Device used to load commercially prepared software.

ACTIVITY A-16: MICROCOMPUTER COMPONENTS
(TEACHER'S COPY)
(Continued)

CPU 14. This computer component is responsible for making logic decisions.

MOUSE 15. Replaces the keyboard for certain input functions.

MOUSE 16. This input device would be an optional part of many computer systems.

DISK DRIVE 17. Two of these make working with some software packages easier.

KEYBOARD 18. Sometimes the CPU and this device are manufactured as one unit.

PRINTER 19. Dot matrix is the most common type.

CPU 20. Loses any stored data or programs when the system is turned off.

Activity Name: Microcomputer Demonstration A-17
Objective 11

Suggested Use of Activity

This is an optional activity and is intended for those students who have a microcomputer at home.

Objectives of Activity

The purpose of this activity is to improve a student's communication skills as well as to acquaint students with the features of various microcomputers.

Facilities or Materials Needed

Microcomputer system
Various software packages
Microcomputer Demonstration Critique worksheet

Description of Activity

The teacher would invite students who have a microcomputer at home to bring it to school and demonstrate its features along with selected software items. The remainder of the class would have an opportunity to ask questions of the person presenting the demonstration. Before the presentation the teacher should distribute the critique sheets and explain and/or answer questions about the form.

Suggested Length of Activity

This activity could take one to two class periods, depending upon the number of computer systems being demonstrated.

Suggestions for Teacher

It is recommended that only one computer system of each type be demonstrated to the class. The number of systems being demonstrated will determine how much time each presenter is allowed. The teacher could also determine which software items each student would be allowed to demonstrate to avoid needless duplication, especially in game-type software. The critique form included with this activity merely suggests some of the items that might appear on such a form. It is suggested that the teacher add additional items as deemed appropriate.

Suggestions for Evaluation

Bonus points could be awarded to each student giving a demonstration. Other students should be required to complete a critique form on each presentation. Points could then be awarded based on the completeness of the critique form.

Name________________________

ACTIVITY A-17: MICROCOMPUTER DEMONSTRATION CRITIQUE

Completed by ________________________________

Presenter's name: ________________________________

Computer being demonstrated: ________________________________

Computer's total memory: ________________________________

Software being demonstrated: ________________________________

____

How understandable was the presenter's demonstration?

very understandable understandable somewhat confusing

What part of the demonstration did you find most informative?

What part of the demonstration did you find confusing?

What part of the demonstration would you like to know more about?

Activity Name: Buying a Microcomputer Case Problem A-18
Objective 12

Suggested Use of Activity

This activity should be used at the end of this topic. The purpose of this activity is to make students aware of the differences between purchasing computer equipment by mail order compared to purchasing it from a retail outlet.

Objectives of Activity

The student should be able to complete the case problem worksheet listing the major advantages and disadvantages of purchasing a computer by mail order as well as from a local retail outlet.

Facilities or Materials Needed

Buying a Microcomputer worksheet
Pen or pencil

Description of Activity

Once the discussion of buying a microcomputer has been completed, students should be given the Buying a Microcomputer worksheet. After reading over the Case Problem, the students should complete the Decision Form. This activity should then be followed up by sharing and discussing the student worksheet responses.

Suggested Length of Activity

Allow approximately 30 minutes to complete this activity--10 minutes for individual seat work and 20 minutes for class discussion.

Suggestions for Teacher

This activity could be used solely as class discussion, or it could be used as a homework assignment.

Suggestions for Evaluation

This assignment is planned as a classroom discussion, so grading of the worksheet is not intended. However, a quiz could be given the following class period. If used as homework, it could be graded using a point system.

Name________________________

ACTIVITY A-18: BUYING A MICROCOMPUTER

Case Problem

Rob has been saving up to buy a microcomputer. He now has enough money saved to purchase one. He has decided to purchase Brand X. He has seen the Brand X computer system advertised in a national computer magazine from a company located in California--California Micro--for $750. A local computer store--Hometown Computer Store--is selling the same Brand X computer system for $850. Rob knows you are studying about computers and has decided to seek your advice. Complete the following decision summary form for him.

Decision Form

Seller	Advantages	Disadvantages
California Micro		
Hometown Computer Store		

Activity Name: Microcomputers Price Comparisons A-19
Objective 12

Suggested Use of Activity

This is suggested as an optional small group activity.

Objectives of Activity

The students should be able to prepare a price comparison bar graph containing a minimum of four entries that is neat and demonstrates proper graphing techniques.

Facilities or Materials Needed

Posterboard or typing paper
Pen, pencil or markers
Ruler
Stencil lettering guides
Magazines and/or newspapers

Description of Activity

This activity should begin with the teacher reviewing how to prepare a bar graph and explaining the various comparisons listed later in this section. The students are to prepare a bar graph using posterboard or typing paper. The bar graph should compare the prices of similar computer components or software available from different manufacturers or a specific item sold by different retail outlets. A minimum of four items should be included in the bar graph. Some possible comparisons are:

Different Brands of Microcomputers (only CPU and keyboard)
Different Brands of a Complete Computer System (CPU, keyboard, disk drive, monitor)
Different Brands of Disk Drives
Different Brands of Printers
A Specific Brand of Computer Purchased from Several Different Retail Outlets
Different Brands of a Specific Software Package (Word Processing, Spreadsheet or Data Base)
A Specific Software Game Purchased from Several Different Retail Outlets
Different Models of Computers Manufactured by the Same Company

Suggested Length of Activity

Approximately 15 minutes of class time should be allowed for introducing this activity. Students should be given a day or two for completing the assignment.

Suggestions for Teacher

To get a better variety of bar graphs, the teacher may want to assign three or four students per topic. Or the topics could be written on slips of paper, placed in a container, and one drawn out by each group. Some class time could be allowed for students to use magazines and newspapers to gather the prices. Students could also be encouraged to visit local retail outlets to get prices. The completed bar graphs could be displayed for student viewing.

Suggestions for Evaluation

The bar graphs should be graded based on the minimum number of entries, appropriate heading, neatness, proper bar graph techniques and appearance. Grading could be either letter grades or assigned points.

UNIT B: HARDWARE AND SOFTWARE CONCEPTS

UNIT PLAN

Introduction

Activities relating to Hardware and Software Concepts progress from simple to complex. This unit is fundamental to the course, although some of the activities are optional. The activities that are marked with an asterisk are required to give the student an understanding of hardware and software concepts. The other activities are optional and may be used as class time permits.

Topical Outline of Unit

HARDWARE AND SOFTWARE CONCEPTS

1. *Hierarchy of Data: Bits to Data Base

2. *Central Processing Unit

3. *Devices and Functions: Input, Storage, Input, Peripherals

4. *Hardware: Mainframe to Microcomputer

5. *Software: Types (Programming to Packages) and Categories (Systems, Programming, Application, Text Development)

6. Sources of Information about Hardware: Loose-leaf References, Consulting Services, Store Demonstrations, Computer Shows, Vendor Literature

7. Sources of Information about Software: A Locating Proprietary Software using Directories, Trade Magazines and Computer Clubs

8. Future Trends in Hardware and Software

Unit Objectives

After completing this unit, students should be able to

1. Define all terms relating to data hierarchy.
2. Identify all parts of the central processing unit.
3. Explain input, output and the functions of storage and peripherals.

117

4. Explain the differences and similarities among the three types of computers.
5. Demonstrate an understanding of the types and categories of software.
6. Locate hardware information using a variety of sources.
7. Locate software information using a variety of sources.
8. Demonstrate an understanding of new technologies in hardware and software development.

SUGGESTED STUDENT ACTIVITIES

Activity Name: Bits to Data Base Terminology B-1
Unit Objective 1

Suggested Use of Activity

Following lecture/discussion of data hierarchy, students will define the terms on the worksheet.

Objectives of Activity

The student should be able to define all terms relating to data hierarchy.

Facilities or Material Needed

Bits to Data Base Terminology worksheet
Pen or pencil

Description of Activity

Students should formulate definitions for all items on the worksheet. Class discussion of those definitions should then take place to clarify any questions about the terms.

Suggested Length of Activity

Approximately 20 minutes

Suggestions for Teacher

This activity can also be used prior to lecture/discussion to give students some background understanding of the terms used in the lecture.

Suggestions for evaluation

Collect worksheets and check for any individual problems.

Name___________________________

ACTIVITY B-1: BITS TO DATA BASE TERMINOLOGY

DIRECTIONS: Define the following terms in your own words as you understand them:

1. Binary number system
2. Bit
3. Byte
4. Character
5. Field
6. Record
7. File
8. Data
9. Data Base
10. ASCII
11. EBCDIC
12. Kilobyte
13. Megabyte

ACTIVITY B-1: BITS TO DATA BASE TERMINOLOGY
(TEACHER'S COPY)

DIRECTIONS: Define the following terms in your own words as you understand them.

1. Binary number system: A number system consisting of only ones and zeros.
2. Bit: Either a zero or a one.
3. Byte: The smallest amount of data that a computer can understand. One byte is made up of eight bits.
4. Character: A single letter, number or symbol represented by one byte.
5. Field: A group of characters that mean something as a unit.
6. Record: A collection of related fields.
7. File: A collection of related records.
8. Data: Facts and figures that can be entered into the computer.
9. Data Base: A very large collection of data.
10. ASCII: American Standard Code of Information Interchange, a commonly used code for representing data.
11. EBCDIC: Extended Binary Coded Decimal Interchange Code, a commonly used code for representing data, traditionally used on large computers.
12. Kilobyte: A measure of computer memory equal to 1024 bytes.
13. Megabyte: A measure of computer memory equal to one million bytes.

Activity Name: Hierarchy of Data Matching B-2
Unit Objective 1

Suggested Use of Activity

The purpose of this activity is to further clarify the data hierarchy.

Objectives of Activity

The student should be able to match all terms correctly.

Facilities or Materials Needed

Hierarchy of Data Matching worksheet
Pen or pencil

Description of Activity

The students should match all items on the worksheet.

Suggested Length of Activity

Approximately 10 minutes

Suggestions for Teacher

Discussion of data hierarchy should take place before this activity.

Suggestions for Evaluation

This activity can be collected and graded.

Name ______________________

ACTIVITY B-2: HIERARCHY OF DATA MATCHING

DIRECTIONS: Match the proper term with the example below.

A. BIT
B. BYTE
C. FIELD
D. CHARACTER
E. FILE
F. RECORD
G. KILOBYTE
H. ASCII
I. EBCDIC
J. DATA BASE

______ 1. Extended Binary Coded Decimal Interchange Code

______ 2. Commonly used code to represent data

______ 3. A large collection of data

______ 4. John Smith
1408 S. Kansas Street
Kansas City, MO 64102

Fred Williams
8236 N. East Rd.
Charlotte, NC 28214

______ 5. 1024 Bytes

______ 6. John Smith
1408 S. Kansas Street
Kansas City, MO 64102

______ 7. A

______ 8. 0

______ 9. John Smith

______10. 00000010

ACTIVITY B-2: HIERARCHY OF DATA MATCHING
(TEACHER'S COPY)

A. BIT
B. BYTE
C. FIELD
D. CHARACTER
E. FILE
F. RECORD
G. KILOBYTE
H. ASCII
I. EBCDIC
J. DATA BASE

I 1. Extended Binary Coded Decimal Interchange Code

H 2. Commonly used code to represent data

J 3. A large collection of data

E 4. John Smith
1408 S. Kansas Street
Kansas City, MO 64102

Fred Williams
8236 N. East Rd.
Charlotte, NC 28214

G 5. 1024 Bytes

F 6. John Smith
1408 S. Kansas Street
Kansas City, MO 64102

D 7. A

A 8. 0

C 9. John Smith

B 10. 00000010

Activity Name: Hierarchy of Data Essay B-3
Unit Objective 1

Suggested Use of Activity

Following lecture/discussion of data hierarcy and data bases, this activity can be assigned as homework. Students may then give oral reports if time permits.

Objectives of Activity

Students will demonstrate an understanding of the societal problems that large data bases can cause.

Facilities or Materials Needed

Notebook paper
Pen or pencil
Hierarchy of Data Essay worksheet

Description of Activity

Students will complete a one-page essay on the question given in the activity.

Suggested Length of Activity

Approximately 1 hour

Suggestions for Teacher

Handouts on computer privacy and data bases may be given to students to read prior to completing the essay. An article that may be used is "Inside the Inner Circle" by "The Cracker," May 1985, Popular Computing Magazine.

Suggestions for Evaluation

Grade essays on the adequacy of the points covered.

Name___________________________

ACTIVITY B-3: HIERARCHY OF DATA ESSAY

DIRECTIONS: Write an essay answering the following questions. Your essay should be approximately one page in length.

Giant data bases provide government agencies, health organizations and businesses with the ability to store large amounts of personal information about people. Do you think a serious threat to our privacy exists because we have the ability to communicate through networks around the country by computer and have access to these data? What controls should there be to prevent unauthorized access to information stored in a computer system? What kinds of punishments should be given to people who access this private information without any authority?

Activity Name: Hierarchy of Data Quiz B-4
Unit Objective 1

Suggested Use of Activity

Following lecture on data hierarchy, the following worksheet can be used as a quiz.

Objectives of Activity

The student will be able to fill in the blanks in the following statements with 100% accuracy.

Facilities or Materials Needed

Hierarchy of Data Quiz
Pen or pencil

Description of Activity

Students will complete and hand in worksheet.

Suggested Length of Activity

Approximately 20 minutes

Suggestions for Evaluation

Grade the worksheet as a quiz with each question worth one point.

Name________________________

ACTIVITY B-4: HIERARCHY OF DATA QUIZ

DIRECTIONS: Fill in the blanks with the correct answer.

1. A(n) ____________________ is a collection of related data fields.
2. A group of characters that means something as a unit is called a(n) ____________________.
3. A(n) ____________________ is a collection of related records.
4. A(n) ____________________ is the smallest amount of data that a computer can read.
5. ____________________ are either 0's or 1's.
6. Each ____________________ is represented by one byte.
7. ____________________ and ____________________ are two commonly used codes for representing data.
8. 1024 bytes of computer memory is called a(n) ____________________.
9. A phone book is an example of a(n)____________________.
10. ____________________ bits make up one byte.

ACTIVITY B-4: HIERARCHY OF DATA QUIZ
(TEACHER'S COPY)

DIRECTIONS: Fill in the blanks with the correct answer.

1. A(n) ______RECORD______ is a collection of related data fields.
2. A group of characters that means something as a unit is called a(n) ______FIELD______.
3. A(n) ______FILE______ is a collection of related records.
4. A(n) ______BYTE______ is the smallest amount of data that a computer can read.
5. ______BITS______ are either 0's or 1's.
6. Each ______CHARACTER______ is represented by one byte.
7. ______ASCII______ and ______EBCDIC______ are two commonly used codes for representing data.
8. 1024 bytes of computer memory is called a(n) ______KILOBYTE______.
9. A phone book is an example of a(n) ______FILE______.
10. ______EIGHT______ bits make up one byte.

Activity Name: Central Processing Unit Terminology B-5
Unit Objective 2

Suggested Use of Activity

Following lecture/discussion of the central processing unit, students will define the terms on the worksheet.

Objectives of Activity

The student will be able to define all terms relating to the central processing unit.

Facilities or Materials Needed

Central Processing Unit Terminology worksheet
Pen or pencil

Description of Activity

Students should formulate definitions for the items on the worksheet. Class discussion of those definitions should then take place to clarify any questions about the terms.

Suggested Length of Activity

Approximately 20 minutes

Suggestions for Teacher

This activity can also be used prior to lecture/discussion to give students some background understanding of the terms used in the lecture.

Suggestions for Evaluation

Collect worksheets and check for any individual problems.

Name____________________________

ACTIVITY B-5: CENTRAL PROCESSING UNIT TERMINOLOGY

DIRECTIONS: Define the following terms.

1. Arithmetic/logic unit

2. Control unit

3. RAM

4. ROM

5. Numeric address

6. Register

7. Machine cycle

8. Main memory

ACTIVITY B-5: CENTRAL PROCESSING UNIT TERMINOLOGY
(TEACHER'S COPY)

DIRECTIONS: Define the following terms.

1. Arithmetic/logic unit: The part of the CPU that performs calculations and logical comparisons.

2. Control unit: Guides the transfer of data and instructions throughout the computer system.

3. RAM: The type of memory where programs and data are temporarily stored.

4. ROM: Type of computer memory in which preset instructions are permanently stored.

5. Numeric address: A unique number for each memory slot in the computer.

6. Register: Temporary storage unit for data and instructions within the CPU.

7. Machine cycle: The length of time it takes the computer to perform one machine operation.

8. Main memory: The CPU, which holds data and instructions needed for processing.

Activity Name: Central Processing Unit Fill in the Blanks B-6
Unit Objective 2

Suggested Use of Activity

Following lecture on the central processing unit, the fill-in-the-blanks worksheet may be used.

Objectives of Activity

Students will be able to fill in the missing information to demonstrate an understanding of the functions of the CPU.

Facilities or Materials Needed

Central Processing Fill-in-the-Blanks worksheet

Description of Activity

Students should fill in blanks on the worksheet.

Suggested Length of Activity

Approximately 15 minutes

Suggestions for Teacher

Diagrams may be helpful in lecturing on the CPU. Diagrams will help to explain the CPU's interaction with the total computer system.

Suggestions for Evaluation

The worksheet can be graded as a quiz with one point for each item.

Name_________________________

ACTIVITY B-6: CENTRAL PROCESSING UNIT FILL IN THE BLANKS

DIRECTIONS: Fill in the blanks.

1. The internal storage unit of the CPU is known as ____________________.

2. The ____________________ unit of the computer is responsible for such operations as addition, subtraction, multiplication and division.

3. A(n) ____________________ is the length of time it takes the computer to perform one specific machine operation.

4. The ____________________ of the CPU oversees the transfer of data and programs instructions to and from main memory and input/output devices.

5. ____________________ is the memory that can be read but not changed.

6. The ____________________ directs and coordinates computer operations.

7. Data are located in a memory unit by use of a(n) ____________________.

8. The temporary memory in a computer is called ____________________.

9. The CPU is sometimes called the ____________________ of the computer.

10. A limited storage area in the computer is a(n) ____________________.

ACTIVITY B-6: CENTRAL PROCESSING UNIT FILL IN THE BLANKS
(TEACHER'S COPY)

DIRECTIONS: Fill in the blanks.

1. The internal storage unit of the CPU is known as MAIN MEMORY.
2. The ARITHMETIC/LOGIC unit of the computer is responsible for such operations as addition, subtraction, multiplication and division.
3. A(n) MACHINE CYCLE is the length of time it takes the computer to perform one specific machine operation.
4. The CONTROL UNIT of the CPU oversees the transfer of data and programs instructions to and from main memory and input/output devices.
5. ROM is the memory that can be read but not changed.
6. The CONTROL UNIT directs and coordinates computer operations.
7. Data are located in a memory unit by use of a(n) NUMERIC ADDRESS.
8. The temporary memory in a computer is called RAM.
9. The CPU is sometimes called the BRAIN/HEART of the computer.
10. A limited storage area in the computer is a(n) REGISTER.

Activity Name: Central Processing Unit Essay B-7
Unit Objective 2

Suggested Use of Activity

Following lecture/discussion of the central processing unit, this activity can be assigned as homework.

Objectives of Activity

Students will demonstrate an understanding of the functions of the central processing unit.

Facilities or Materials Needed

Central Processing Unit Essay worksheet
Pen or pencil

Description of Activity

Students should complete an essay describing the functions of the central processing unit complete with diagram.

Suggested Length of Activity

Approximately 1 hour

Suggestions for Teacher

This essay can also be used as an in-class activity.

Suggestions for Evaluation

Essays should be graded on the correctness of the information given.

Name____________________

ACTIVITY B-7: CENTRAL PROCESSING UNIT ESSAY

Briefly describe the function of the three units (memory, arithmetic/logic and control) within a computer. Diagram your description.

Activity Name: Central Processing Unit Crossword Puzzle B-8
Unit Objective 2

Suggested Use of Activity

Following lecture/discussion of the central processing unit, the following crossword puzzle may be used.

Objectives of Activity

The students should complete the crossword puzzle with 100% accuracy.

Facilities or Materials Needed

CPU Crossword Puzzle
CPU Crossword Puzzle Clue Sheet
Pencil

Description of Activity

Students will complete the crossword puzzle.

Suggested Length of Activity

Approximately 30 minutes

Suggestions for Teacher

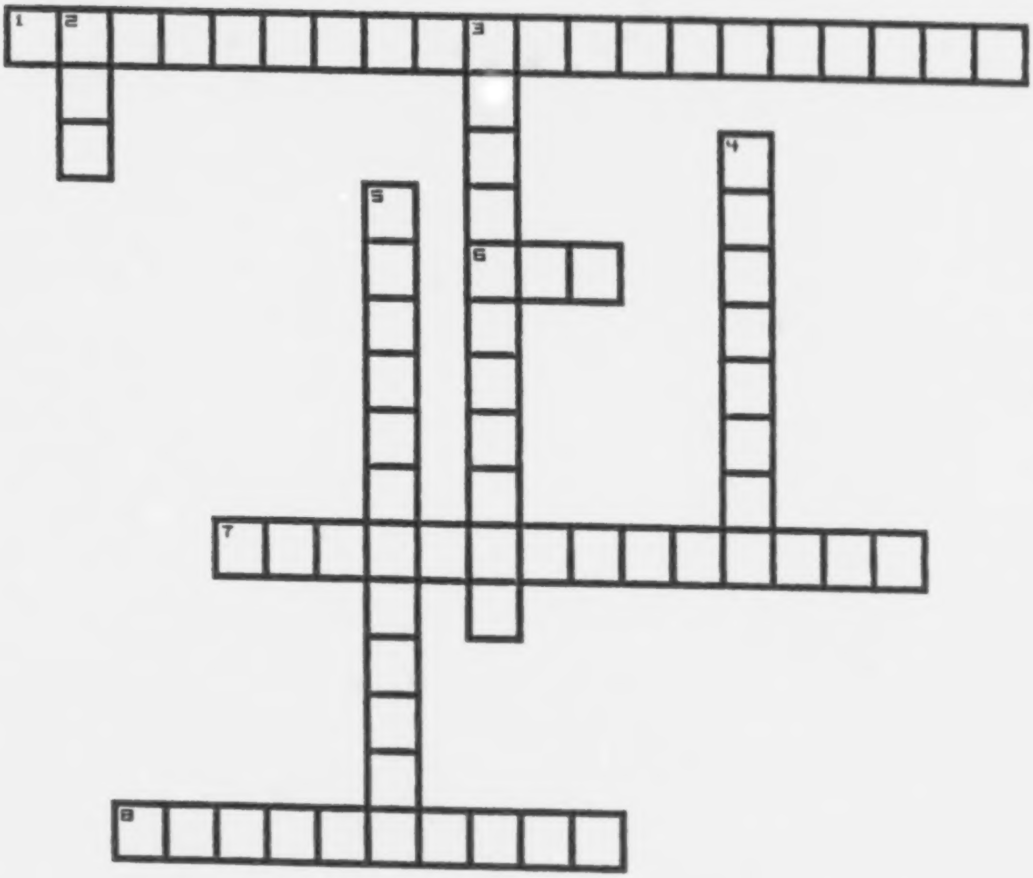
This activity can also be assigned as homework.

Suggestions for Evaluation

Suggested evaluation of this activity is self-correction by students. Solution can be put on a transparency for ease of correction.

Name______________________________

ACTIVITY B-8: CPU CROSSWORD PUZZLE



Name_______________________

ACTIVITY B-8: CPU CROSSWORD PUZZLE CLUE SHEET

ACROSS CLUES

1. The part of the CPU that performs calculations and logical comparisons.
6. The type of memory where programs and data are temporarily stored.
7. A unique number for each memory slot in the computer.
8. The CPU, it holds data and instructions needed for processing.

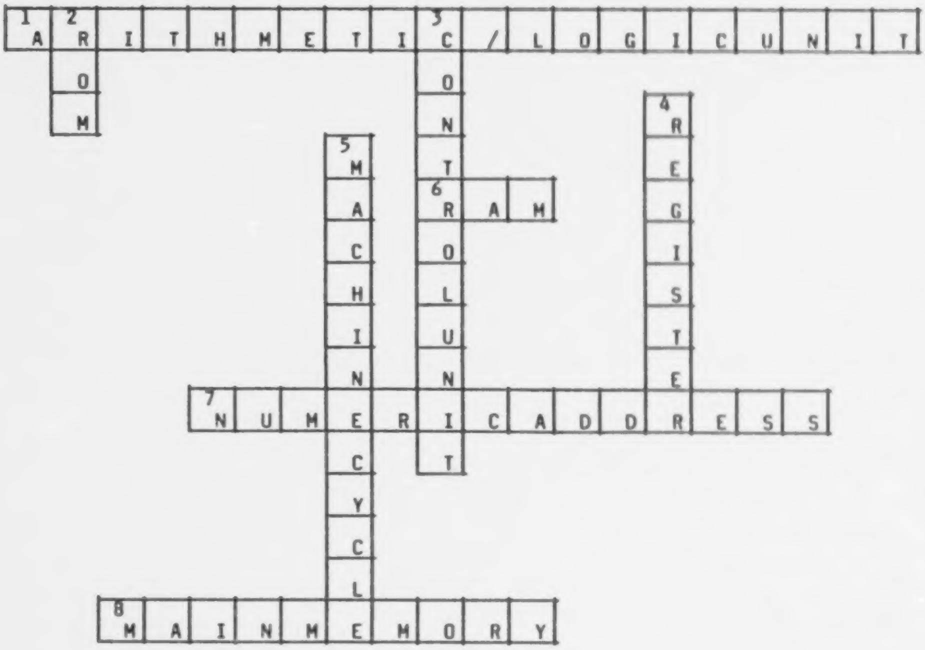
DOWN CLUES

2. Type of computer memory in which preset instructions are permanently stored.
3. Guides the transfer of data and instructions throughout the computer system.
4. Temporary storage unit for data and instructions within the CPU.
5. The length of time it takes the computer to perform one machine operation.

ACTIVITY B-8: CPU CROSSWORD PUZZLE
(TEACHER'S COPY)

WORD LIST: CPU

Arithmetic/logicunit
Controlunit
Mainmemory
Machinecycle
Numbericaddress
RAM
Register
ROM


1 A R I T H M E T I C / L O G I C U N I T
2 R O M
3 C O N T R O L U N I T
4 R E G I S T E R
5 M A C H I N E C Y C L E
6 R A M
7 N U M E R I C A D D R E S S
8 M A I N M E M O R Y

Activity Name: Devices and Functions Crossword Puzzle
Unit Objective 3

Suggested Use of Activity

Following discussion of input, output and storage devices, the following crossword puzzle may be used.

Objectives of Activity

The students should complete the crossword puzzle with 100% accuracy.

Facilities or materials needed

Devices and Functions Crossword Puzzle
Devices and Functions Crossword Puzzle Clue Sheet
Pencil

Description of Activity

Students will complete the crossword puzzle worksheet

Suggested Length of Activity

Approximately 30 minutes.

Suggestions for Teacher

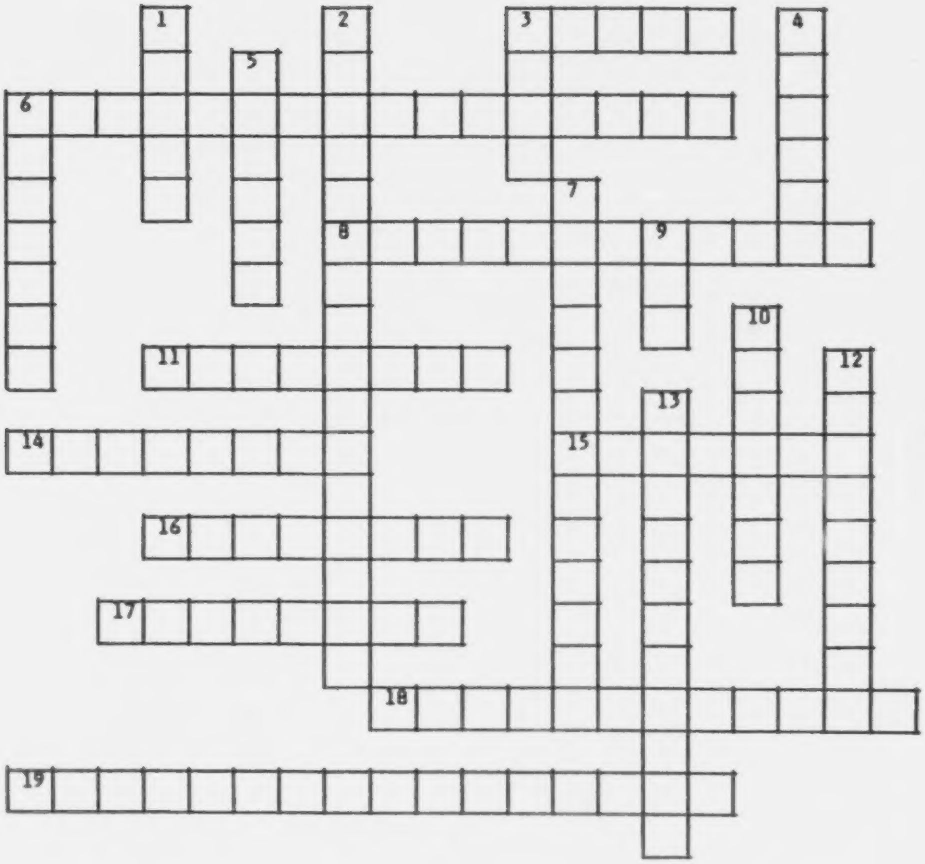
This activity can also be assigned as homework.

Suggestions for Evaluation

Suggested evaluation of this activity is self-correction by students. Solution can be put on a transparency for ease of correction.

Name______________________________

ACTIVITY B-9: DEVICES AND FUNCTIONS CROSSWORD PUZZLE


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19

Name____________________________

ACTIVITY B-9: DEVICES AND FUNCTIONS CROSSWORD PUZZLE CLUE SHEET

ACROSS CLUES

3. Device used to connect a computer to a telephone line for data communication.
6. Reading records in a file in a one-after-the-other fashion.
8. The ability to retrieve a record without having to read everything before it.
11. An input device that uses keys for data entry.
14. Input device that uses light to draw on a CRT.
15. Output device that draws continuous images on paper using a pen.
16. Input device that uses a lever to move items on the screen.
17. Output data or information in the form of a printed report.
18. An output device that created an image with a laser beam.
19. Output device that produces copy without striking the paper.

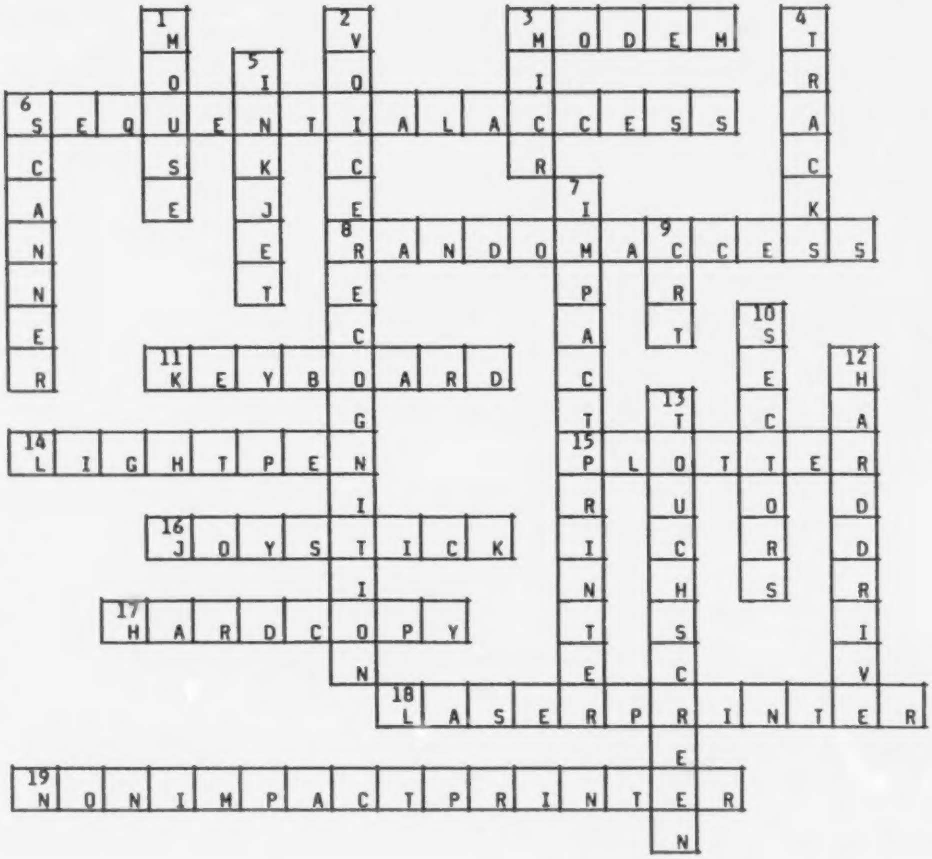
DOWN CLUES

1. Input device that a user moves across a desktop to move a pointer on the screen.
2. Input technology that does not require a keyboard, but only the spoken instructions of the user.
3. Used by the banking industry information can be read directly from a check.
4. Circles on the surface of a disk that are paths for recording data.
5. Output device that sprays ink to form printed images on a page.
6. Input device that can read characters, marks and bar codes as data.
7. Output device that strikes the paper through an inked ribbon.
9. A television-like screen used to display data.
10. A division of a disk track used as a storage area.
12. Fixed storage medium that can hold many more characters than a floppy disk.
13. Input device that requires a touch sensitive surface.

ACTIVITY B-9: DEVICES AND FUNCTIONS CROSSWORD PUZZLE
(TEACHER'S COPY)

Word List: Input

CRT
Hardcopy
Harddrive
Impactprinter
Inkjet
Joystick
Keyboard
Laserprinter
Lightpen
MICR
Modem
Mouse
Nonimpactprinter
Plotter
Randomaccess
Scanner
Sequentialaccess
Sectors
Touchscreen
Tracks
Voicerecognition


1 MOUSE
2 VOICERECOGNITION
3 MODEM
3 MICR
4 TRACKS
5 INKJET
6 SEQUENTIALACCESS
6 SCANNER
7 IMPACTPRINTER
8 RANDOMACCESS
9 CRT
10 SECTORS
11 KEYBOARD
12 HARDDRIVE
13 TOUCHSCREEN
14 LIGHTPEN
15 PLOTTER
16 JOYSTICK
17 HARDCOPY
18 LASERPRINTER
19 NONIMPACTPRINTER

Activity Name: Devices and Functions Definitions
and Illustrations
Unit Objective 3

B-10

Suggested Use of Activity

This activity can best be used as a homework assignment.

Objectives of Activity

Students will be able to define and recognize input, storage and output devices.

Facilities or Materials Needed

Instructions and List of Items worksheet
Plain paper
Scissors
Glue
Magazines, catalogs and advertising brochures
Pen or pencil

Description of Activity

Students will locate a picture of each item on the list. They will put each picture on a sheet of paper and write the definition under the picture. They can then staple or bind all of the sheets together and hand them in.

Suggested Length of Activity

Approximately 3 days

Suggestions for Teacher

This activity can also be used in class as a small group project with three or four students to a group in class. Students can bring in their own materials and magazines.

Suggestions for Evaluation

Collect packet and grade on accuracy of definitions and correctness of pictured item.

Name_______________________________

ACTIVITY B-10: INSTRUCTION AND LIST OF ITEMS

DIRECTIONS: For the list below find a picture that illustrates each item. Place each picture on a separate piece of plain paper and write the definition or description of the item below its picture. Staple or bind all of your sheets together and hand them in.

1. Keyboard
2. Mouse
3. Light pen
4. Scanner
5. Plotter
6. CRT
7. Joystick
8. Floppy disk
9. Laser disk
10. Hard drive
11. Magnetic tape
12. Laser printer
13. Daisywheel printer
14. Dot matrix printer
15. Ink-jet printer
16. Modem

Activity Name: Devices and Functions Fill in the Blanks B-11
Unit Objective 3

Suggested Use of Activity

After a discussion of input, output and storage devices, the students should complete the following worksheet.

Objectives of Activity

The student will show an understanding of various input, output and storage devices.

Facilities or Materials Needed

Devices and Functions Fill-in-the-Blanks worksheet
Pen or pencil

Description of Activity

Students will complete and hand in worksheet.

Suggested Length of Activity

Approximately 40 to 50 minutes for discussion and activity

Suggestions for Evaluation

This activity can be graded as a quiz.

Name________________________

ACTIVITY B-11: DEVICES AND FUNCTIONS FILL IN THE BLANKS

DIRECTIONS: Fill in the blanks in the following statements.

1. ___________________ characters on bank checks are used to identify customer and bank information.

2. The type of printer that strikes the surface of the paper is known as a(n) ___________________.

3. A(n) ___________________ can draw maps, graphs and charts as hard-copy.

4. Records are read in one-after-the-other fashion in a ___________________ file.

5. A removable storage device used mainly by microcomputers is called a(n) ___________________.

6. A(n) ___________________ is a storage device that cannot be changed once data are stored on it by burning small holes in the medium.

7. Using ___________________ banking can be done by a customer without going to the bank.

8. ___________________ makes it possible to locate a record without searching through all the records from the beginning of the file.

9. A(n) ___________________ is a pointer device which is moved across a desk to cause a pointer to select items needed to perform some computer task.

10. ___________________ are used on products and read with a scanning device, particularly found at the supermarket.

11. An input technology that requires only spoken words is called ___________________.

12. Anything that is connected to a computer but is not part of the main system is called a(n) ___________________.

13. A(n) ___________________ is used to allow computers to communicate over telephone lines.

14. A television-like screen for viewing data is called a ___________________.

15. A laser printer is an example of a(n) ___________________ type printer.

ACTIVITY B-11 DEVICES AND FUNCTIONS FILL IN THE BLANKS
(TEACHER'S COPY)

DIRECTIONS: Fill in the blanks in the following statements.

1. MICR characters on bank checks are used to identify customer and bank information.

2. The type of printer that strikes the surface of the paper is known as a(n) impact.

3. A(n) plotter can draw maps, graphs and charts as hard-copy.

4. Records are read in one-after-the-other fashion in a sequential access file.

5. A removable storage device used mainly by microcomputers is called a(n) floppy disk.

6. A(n) laser disk is a storage device that cannot be changed once data are stored on it by burning small holes in the medium.

7. Using electronic funds transfer banking can be done by a customer without going to the bank.

8. Random access makes it possible to locate a record without searching through all the records from the beginning of the file.

9. A(n) mouse is a pointer device which is moved across a desk to cause a pointer to select items needed to perform some computer task.

10. Bar codes are used on products and read with a scanning device, particularly found at the supermarket.

11. An input technology that requires only spoken words is called voice recognition.

12. Anything that is connected to a computer but is not part of the main system is called a(n) peripheral.

13. A(n) modem is used to allow computers to communicate over telephone lines.

14. A television-like screen for viewing data is called a CRT.

15. A laser printer is an example of a(n) non-impact type printer.

Activity Name: Devices and Functions Essay Questions B-12
Unit Objective 3

Suggested Use of Activity

This activity can be given as a homework assignment or an in-class essay.

Objectives of Activity

Students should be able to demonstrate an understanding of input, output and storage operations.

Facilities or Materials Needed

Devices and Functions Essay Questions
Paper
Pen or pencil

Description of Activity

Students will write a one- to two-page essay on one of the following questions.

Suggested Length of Activity

A 50-minute class period or as a homework assignment

Suggestions for Teacher

Students can be assigned a particular question rather than allowing the student to choose the question.

Suggestions for Evaluation

Essays should be graded on the adequacy of the points covered.

Name________________________

ACTIVITY B-12: DEVICES AND FUNCTIONS ESSAY QUESTIONS

Explain how input/output operations occur within a computer system. Draw a diagram of how these operations occur.

What are some of the newer technologies in input, output and storage devices? Describe some ways in which these new technologies can be used.

Describe some applications for which you think voice input and output would be good. What are the advantages and disadvantages of this technology?

Activity Name: Hardware Terminology B-13
Unit Objective 4

Suggested Use of Activity

After a discussion of mainframes, minicomputers and microcomputers, students can use the following worksheet.

Objectives of Activity

The students should be able to define some commonly used terms that relate to the three types of computers.

Facilities or Materials Needed

Hardware Terminology worksheet
Additional reference materials
Pen or pencil

Description of Activity

The students define words on the worksheet. Class discussion can then take place to clarify any questions about the terms.

Suggested Length of Activity

Approximately 30 minutes

Suggestions for Teacher

This activity may be used prior to lecture/discussion to give students some background understanding of the terms.

Suggestions for Evaluation

Collect worksheets and check for any individual problems.

Name________________________

ACTIVITY B-13: HARDWARE TERMINOLOGY

DIRECTIONS: Define the following terms in your own words.

1. Mainframe
2. Minicomputer
3. Microcomputer
4. Supercomputer
5. Multiprogramming
6. Terminal
7. Teleprocessing
8. Timesharing
9. Response time
10. Backup
11. IPO Cycle
12. Online
13. Offline
14. Volatile (temporary) memory

Name__________________________

ACTIVITY B-13: HARDWARE TERMINOLOGY
(Continued)

15. Non-volatile (permanent) memory

16. Auxiliary storage

17. Microprocessor

ACTIVITY B-13: HARDWARE TERMINOLOGY
(TEACHER'S COPY)

DIRECTIONS: Define the following terms in your own words.

1. Mainframe: A large computer used by big businesses.
2. Minicomputer: A medium-sized computer.
3. Microcomputer: A small computer usually found in homes and schools.
4. Supercomputer: The largest and newest type of computer.
5. Multiprogramming: The ability of the computer to hold more than one program at a time.
6. Terminal: A keyboard and CRT connected by communication lines to a computer.
7. Teleprocessing: Transferring data between computers by phone lines.
8. Timesharing: The ability of a computer to share its processing work by alternating between programs.
9. Response time: The time it takes for the computer to answer a user's request or follow a direction.
10. Backup: An extra copy of programs or data files.
11. IPO Cycle: The steps that a computer goes through to process data consisting of input, processing and output.
12. Online: Input/output operations under the control of the computer.
13. Offline: Input/output operations not under the control of the computer.
14. Volatile (temporary) memory: Memory that is lost when the power is turned off to the computer.
15. Non-volatile (permanent) memory: Memory that is not lost when the power to the computer is turned off.
16. Auxiliary storage: Storage outside of the main memory--floppy disks, magnetic tape, etc.

ACTIVITY B-13: HARDWARE TERMINOLOGY
(TEACHER'S COPY)
(Continued)

17. Microprocessor: The basis for the processing power of the microcomputer. The microprocessor contains the CPU for the microcomputer on one chip.

Activity Name: Hardware Crossword Puzzle B-14
Unit Objective 4

Suggested Use of Activity

Following discussion of the different types of computers and the terms associated with them, the crossword puzzle may be used.

Objectives of Activity

The students should be able to complete the crossword puzzle with 100% accuracy.

Facilities or Materials Needed

Hardware Crossword Puzzle
Hardware Crossword Puzzle Clue Sheet
Pencil

Description of Activity

Students should complete the crossword puzzle.

Suggested Length of Activity

Approximately 30 minutes

Suggestions for Teacher

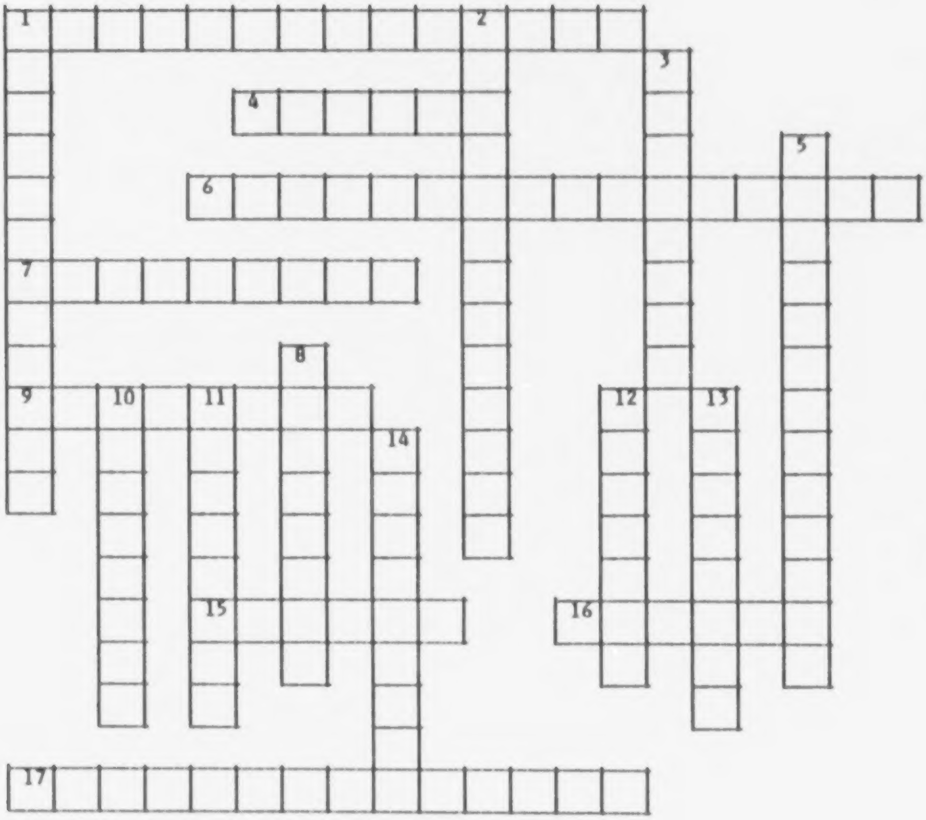
This activity can also be assigned as homework.

Suggestions for Evaluation

Suggested evaluation of this activity is self-correction by students. Solution can be put on a transparency for ease of correction.

Name______________________________

ACTIVITY B-14: HARDWARE CROSSWORD PUZZLE


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17

Name___________________________

ACTIVITY B-14: HARDWARE CROSSWORD PUZZLE CLUE SHEET

ACROSS CLUES

1. A small silicon chip which contains all of the processing hardware for a microcomputer.
4. An extra copy of data on a disk or tape.
6. Ability of a computer to hold more than one program at a time.
7. A large computer used by big businesses and organizations.
9. A keyboard and CRT that is connected to a computer by phone lines and used for entry only.
15. The flashing line or box in a CRT that shows where the next characacter will appear.
16. Input/output operations are under the control of the computer.
17. Using telephone lines to transfer data between computers.

DOWN CLUES

1. A medium sized computer.
2. The largest of the computers, can handle tremendous amounts of data at one time.
3. One million bytes.
5. A small computer used in homes, offices and schools.
8. The input, processing and output equipment in a computer system.
10. Computer controlled mechanical arms that do a variety of applications.
11. An abbreviation for the steps that the computer goes through when handling data.
12. Input/output operations are not under the control of the computer.
13. A term used to describe a computer's memory loss when the power is turned off.
14. An offline device that allows someone to type on a keyboard and put the data directly on tape.

Name____________________________

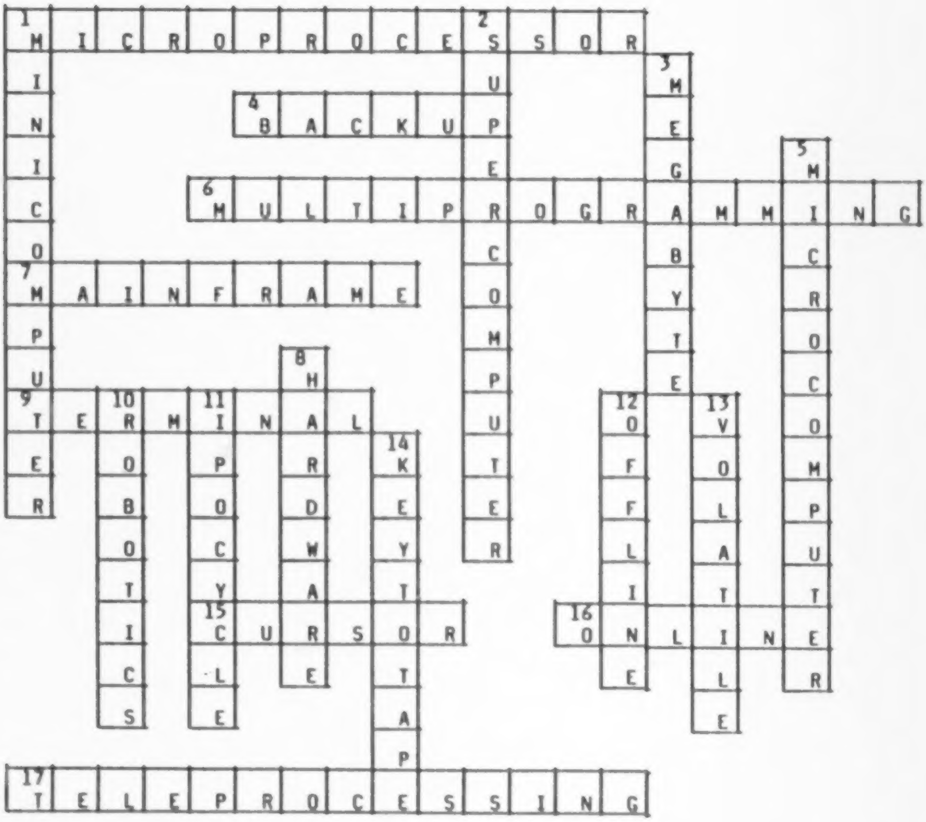
ACTIVITY B-14: HARDWARE CROSSWORD PUZZLE
(TEACHER'S COPY)

WORD LIST: Hardware

Backup
Cursor
Hardware
Ipocycle
Keytotape
Mainframe

Megabyte
Microprocessor
Minicomputer
Microcomputer
Multiprogramming
Offline

Online
Robotics
Supercomputer
Terminal
Teleprocessing
Volatile


1 MICROPROCESSOR
1 MINICOMPUTER
2 SUPERCOMPUTER
3 MEGABYTE
4 BACKUP
5 MICROCOMPUTER
6 MULTIPROGRAMMING
7 MAINFRAME
8 HARDWARE
9 TERMINAL
10 ROBOTICS
11 IPOCYCLE
12 OFFLINE
13 VOLATILE
14 KEYTOTAPE
15 CURSOR
16 ONLINE
17 TELEPROCESSING

Activity Name: Hardware Fill in the Blanks B-15
Unit Objective 4

Suggested Use of Activity

Following a lecture on the different types of computers and related terms, this worksheet can be used.

Objectives of Activity

The student should be able to fill in the blanks in the following statements with 100% accuracy.

Facilities or Materials Needed

Hardware Fill-in-the-Blanks worksheet
Pen or pencil

Description of Activity

Students will complete and hand in worksheet.

Suggested Length of Activity

Approximately 20 minutes

Suggestions for Evaluation

This activity can be graded as a quiz.

Name________________________

ACTIVITY B-15: HARDWARE FILL IN THE BLANKS

DIRECTIONS: Fill in the blanks with the correct term.

1. The steps that the computer goes through when handling data are called the ____________________.

2. An extra copy of programs and files on a disk is called a ____________________.

3. The largest and newest type of computer is a(n) ____________________.

4. A(n) ____________________ is the basis for the processing power of a microcomputer.

5. One million bytes is called a(n) ____________________.

6. A medium-sized computer is called a(n) ____________________.

7. ____________________ is the ability of the computer to hold more than one program at a time.

8. The amount of time the computer takes to answer a user's request is called ____________________.

9. ____________________ is transferring data between computers over phone lines.

10. A large computer used by big businesses is a(n) ____________________.

11. When input/output operations are not under the computer's control, the operations are said to be ____________________.

12. ____________________ are usually found in homes, schools and small offices.

13. A keyboard and CRT connected by communication lines to a computer is called a(n) ____________________.

14. A(n) ____________________ is the flashing light or box that shows you where the next character will appear.

15. Memory is ____________________ when the information in it is lost when the power is turned off.

Name____________________________

ACTIVITY B-15: HARDWARE FILL IN THE BLANKS
(Continued)

16. ____________________ is the machines and equipment that make up a computer system.

17. A computer-controlled mechanical arm that can repeat and do difficult movements is called a(n) ____________________.

18. Storage outside of the main memory of the computer is called ____________________.

19. Hard disk platters stacked together to allow for storing large amounts of data are called ____________________.

20. When input/output operations are under the control of the computer, the operations are said to be ____________________.

ACTIVITY B-15: HARDWARE FILL IN THE BLANKS
(TEACHER'S COPY)

DIRECTIONS: Fill in the blanks with the correct term.

1. The steps that the computer goes through when handling data are called the INPUT/OUTPUT CYCLE.
2. An extra copy of programs and files on a disk is called a(n) BACKUP.
3. The largest and newest type of computer is a(n) SUPER COMPUTER.
4. A(n) MICROPROCESSOR is the basis for the processing power of a microcomputer.
5. One million bytes is called a(n) MEGABYTE.
6. A medium-sized computer is called a(n) MINICOMPUTER.
7. MULTIPROGRAMMING is the ability of the computer to hold more than one program at a time.
8. The amount of time the computer takes to answer a user's request is called EXECUTION TIME.
9. TELECOMMUNICATION is transferring data between computers over phone lines.
10. A large computer used by big businesses is a(n) MAINFRAME.
11. When input/output operations are not under the computer's control, the operations are said to be OFFLINE.
12. MICROCOMPUTERS are usually found in homes, schools and small offices.
13. A keyboard and CRT connected by communication lines to a computer is called a(n) TERMINAL.
14. A(n) CURSOR is the flashing light or box that shows you where the next character will appear.
15. Memory is VOLATILE (TEMPORARY) when the information in it is lost when the power is turned off.

ACTIVITY B-15: HARDWARE FILL IN THE BLANKS
(TEACHER'S COPY)
(Continued)

16. HARDWARE is the machines and equipment that make up a computer system.

17. A computer-controlled mechanical arm that can repeat and do difficult movements is called a(n) ROBOT .

18. Storage outside of the main memory of the computer is called SECONDARY OR AUXILIARY STORAGE .

19. Hard disk platters stacked together to allow for storing large amounts of data are called DISK PACKS .

20. When input/output operations are under the control of the computer, the operations are said to be ONLINE .

Activity Name: Hardware Essay B-16
Unit Objective 4

Suggested Use of Activity

Following lecture/discussion of the different types of computers and computer hardware, this activity can be assigned as homework. Students may then give oral reports if time permits.

Objectives of Activity

Students should demonstrate an understanding of computer hardware.

Facilities or Materials Needed

Hardware Essay Questions worksheet
Paper
Pen or pencil

Description of Activity

Students will complete a one-page essay on one of the topics on the following page.

Suggested Length of Activity

Approximately 1 hour

Suggestions for Teacher

Students can be assigned a particular question rather than allowing students to choose their questions. This will be particularly helpful if oral reports will be given.

Suggestions for Evaluation

Essays should be graded on the adequacy of the points covered.

Name____________________________

ACTIVITY B-16: HARDWARE ESSAY QUESTIONS

DIRECTIONS: Write an essay on one of the following topics/questions. Your essay should be approximately one page in length.

1. What are some of the differences between the types of computers? Why is it sometimes difficult to put a computer into one class or another?

2. Describe the hardware components of a microcomputer system. What would be the most common uses for a system of this kind?

3. What types of things should you consider when shopping for a computer? What reasons would you have for selecting one type of computer over another?

4. Identify two vendors of microcomputers. Discuss the products offered by them. Compare the costs of the two systems.

Activity Name: Software Definitions B-17
Unit Objective 5

Suggested Use of Activity

Following lecture/discussion of software, students will define the terms on the worksheet.

Objectives of Activity

The students should be able to define terms relating to computer software with 100% accuracy.

Facilities or Materials Needed

Software Definitions worksheet
Pen and pencil

Description of Activity

Students will define the terms on the following worksheet.

Suggested Length of Activity

Approximately 40 to 50 minutes

Suggestions for Teacher

This activity can also be used prior to lecture/discussion to give the students an understanding of the terms used in the lecture.

Suggestions for Evaluation

Collect worksheets and check for any individual problems.

Name________________________

ACTIVITY B-17: SOFTWARE DEFINITIONS

DIRECTIONS: Define the following terms.

1. Applications software
2. Machine language
3. High-level language
4. Operating system
5. Natural language processor
6. Interpreter
7. Compiler
8. Integrated software
9. Spreadsheet
10. Program
11. Word processor
12. Structured programming
13. Flowchart
14. Control programs

Name____________________________

ACTIVITY B-17: SOFTWARE DEFINITIONS
(Continued)

15. Communications software

16. Assembler

17. BASIC

18. COBOL

19. Assembly language

20. Low-level language

ACTIVITY B-17: SOFTWARE DEFINTIONS
(TEACHER'S COPY)

DIRECTIONS: Define the following terms.

1. Applications software: Program written specifically for a user's needs.
2. Machine language: The only language that a computer can understand. It is written with all ones and zeros.
3. High-level language: Programming languages that are closer to English than machine language and use some English words and phrases.
4. Operating system: A group of programs that control the use of the computer's resources.
5. Natural language processor: The program that translates plain English instructions into a language that the computer can understand.
6. Interpreter: A program that translates a language one line at a time.
7. Compiler: A program that translates the entire program before it can be run.
8. Integrated software: Software that can share data between programs.
9. Spreadsheet: An applications program that allows the user to input rows and columns of data and can perform mathematical calculations on the data.
10. Program: A set of instructions for the computer.
11. Word processor: A widely used applications program to prepare letters, memos, etc.
12. Structured programming: A type of programming where all instructions come in logical sequence.
13. Flowchart: A tool used by programmers to design program logic by drawing specially shaped boxes.
14. Control programs: Part of the operating system; these programs manage the flow of programs and data through the computer.

ACTIVITY B-17: SOFTWARE DEFINITIONS
(TEACHER'S COPY)
(Continued)

15. Communications software: Applications program that allows the user to communicate with other computers over phone lines.

16. Assembler: The translator for the assembly language.

17. BASIC: An easy-to-learn language, commonly used to teach programming.

18. COBOL: A programming language written for business applications.

19. Assembly language: A low-level language that uses some abbreviations, rather than all ones and zeros.

20. Low-level language: Either machine language or assembly language.

Activity Name: Software Quiz B-18
Unit Objective 5

Suggested Use of Activity

Following lecture on software, the following worksheet can be used as a quiz.

Objectives of Activity

The students should be able to fill in the blanks in the following statements with 100% accuracy.

Facilities or Materials Needed

Software Quiz
Pen or pencil

Description of Activity

Students will complete and hand in worksheet.

Suggested Length for Activity

Approximately 30 minutes

Suggestions for Evaluation

Grade this activity as a quiz.

Name____________________________

ACTIVITY B-18: SOFTWARE QUIZ

1. A(n) __________________ is a set of instructions for the computer.

2. An easy-to-learn language commonly used to teach programming is __________________.

3. A tool used by programmers to design program logic by drawing specially shaped boxes is called a(n)__________________.

4. A group of programs that controls the functions of the system resources is called a(n) __________________.

5. A program that translates a high-level language one line at a time is called a(n) __________________.

6. The only language that a computer can understand is __________________.

7. __________________ is a type of program written for a specific user's needs.

8. __________________ is a programming language written specifically for business applications.

9. Machine and assembly languages are both __________________-level languages.

10. A program that translates the entire program before it can be run is called a(n) __________________.

11. A widely used applications program to prepare letters, memos and other documents is called a(n) __________________.

12. Software that can share data between programs is __________________ software.

13. A highly structured programming language developed in the 1970s is __________________.

14. Programming languages that use English words or phrases and must be translated into machine language before they can be used by the computer are called __________________.

15. Programs that allow a computer to talk to other computers over phone lines are called __________________ software.

175

ACTIVITY B-18: SOFTWARE QUIZ
(TEACHER'S COPY)

1. A(n) PROGRAM is a set of instructions for the computer.

2. An easy-to-learn language commonly used to teach programming is BASIC .

3. A tool used by programmers to design program logic by drawing specially shaped boxes is called a(n) FLOWCHART .

4. A group of programs that controls the function of the system resources is called a(n) OPERATING SYSTEM .

5. A program that translates a high-level language one line at a time is called a(n) INTERPRETER .

6. The only language that a computer can understand is MACHINE LANGUAGE .

7. APPLICATIONS SOFTWARE is a type of program written for a specific user's needs.

8. COBOL is a programming language written specifically for business applications.

9. Machine and assembly languages are both LOW -level languages.

10. A program that translates the entire program before it can be run is called a(n) COMPILER .

11. A widely used applications program to prepare letters, memos and other documents is called a(n) WORD PROCESSOR .

12. Software that can share data between programs is INTEGRATED software.

13. A highly structured programming language developed in the 1970s is PASCAL .

14. Programming languages that use English words or phrases and must be translated into machine language before they can be used by the computer are called HIGH-LEVEL LANGUAGES .

15. Programs that allow a computer to talk to other computers over phone lines are called COMMUNICATIONS software.

Activity Name: Software Crossword Puzzle B-19
Unit Objective 5

Suggested Use of Activity

Following a discussion of software and associated terms, the crossword puzzle may be used.

Objectives of Activity

The students should complete the crossword puzzle with 100% accuracy.

Facilities or Materials Needed

Software Crossword Puzzle
Software Crossword Puzzle Clue sheet
Pencil

Description of Activity

Students will complete the crossword puzzle.

Suggested Length of Activity

Approximately 30 minutes

Suggestions for Teacher

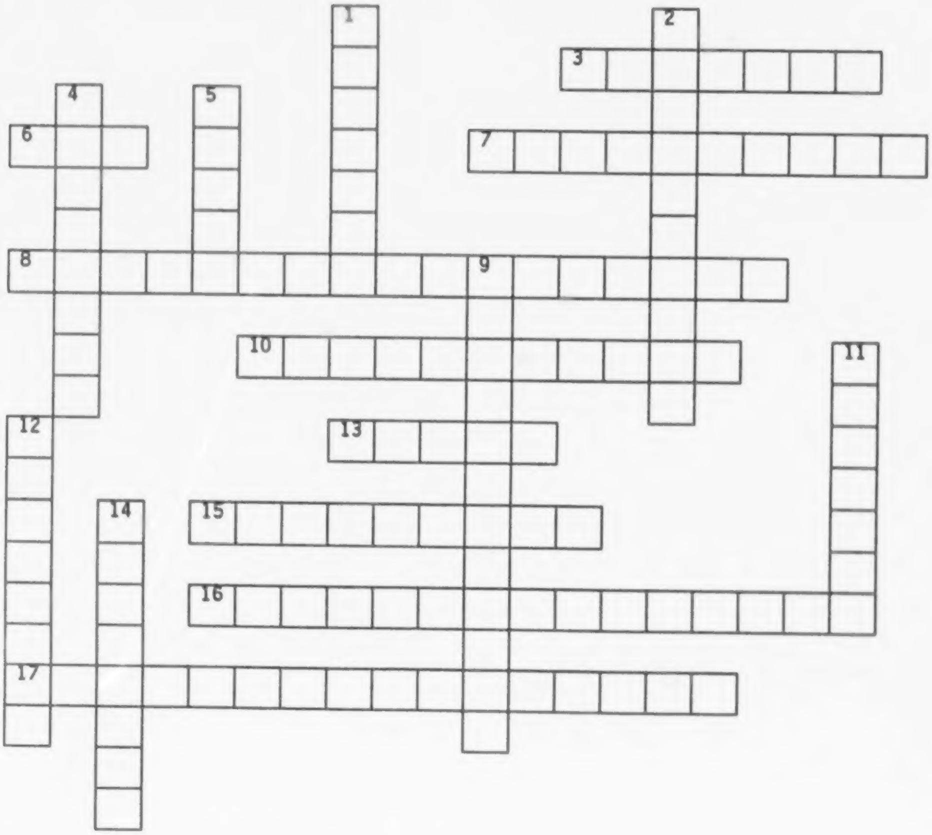
This activity can also be assigned as homework.

Suggestions for Evaluation

Suggested evaluation of this activity is self-correction by students. Solution can be put on a transparency for ease of correction.

Name____________________________

ACTIVITY B-19: SOFTWARE CROSSWORD PUZZLE


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17

Name____________________________

ACTIVITY B-19: SOFTWARE CROSSWORD PUZZLE CLUE SHEET

ACROSS CLUES

3. Part of operating system, manages the flow of data and programs through the computer.
6. Abbreviation that stands for disk operating system.
7. Software in the operating system that prepares the machine instructions.
8. Type of programming language that must be translated before it can be used by the computer.
10. A program that translates a high-level language on one line at a time.
13. An easy to learn language, commonly used on microcomputers and in education.
15. Used to design logic of a program by drawing specially shaped boxes containing descriptions.
16. Systems programs that control the use of the computer's resources.
17. Machine oriented programming languages.

DOWN CLUES

1. A programming language that uses only 1's and 0's.
2. Software that is able to share information with other programs.
4. Systems program that translates an entire program at one time.
5. A language designed specifically for use in business.
9. Software that is written for a particular users needs.
11. A set of instructions for the computer.
12. A low level language that uses some abbreviations instead of all 1's and 0's.
14. Programs that perform operations and applications on the computer.

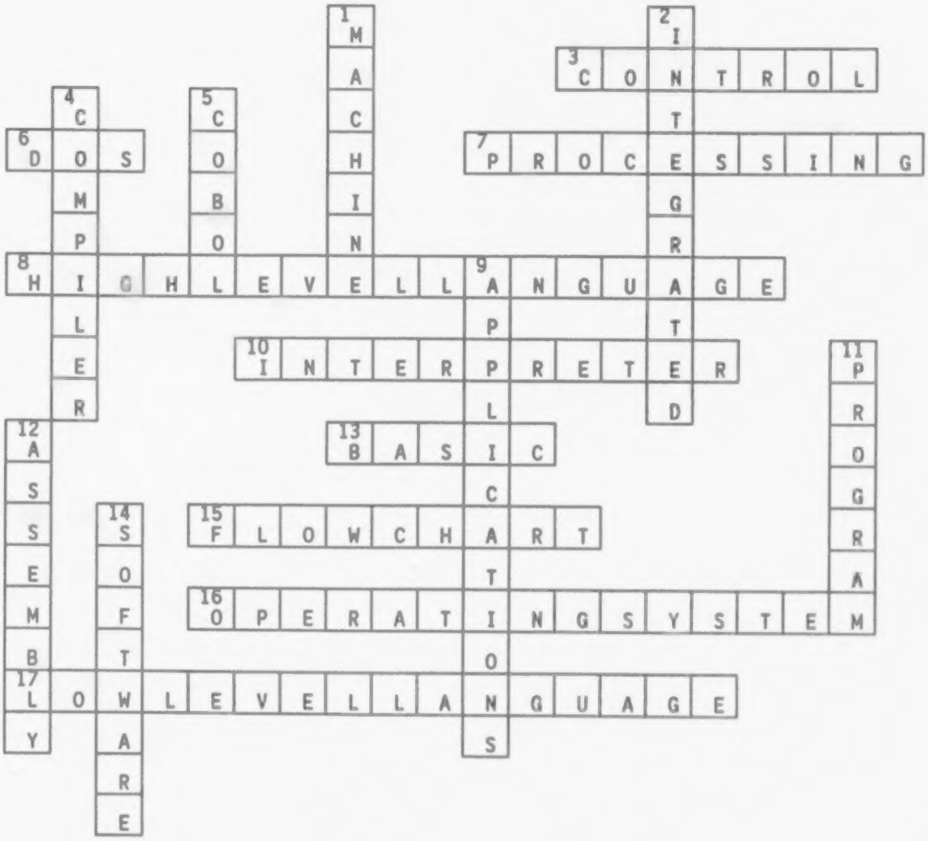
ACTIVITY B-19: SOFTWARE CROSSWORD PUZZLE
(TEACHER'S COPY)

WORD LIST: SOFTWARE2

Applications
Assembly
Basic
Control
Compiler
COBOL

DOS
Flowchart
Highlevellanguage
Interpreter
Integrated
Lowlevellanguage

Machine
Operatingsystem
Processing
Program
Software


1 MACHINE
2 INTEGRATED
3 CONTROL
4 COMPILER
5 COBOL
6 DOS
7 PROCESSING
8 HIGHLEVELLANGUAGE
9 APPLICATIONS
10 INTERPRETER
11 PROGRAM
12 ASSEMBLY
13 BASIC
14 SOFTWARE
15 FLOWCHART
16 OPERATINGSYSTEM
17 LOWLEVELLANGUAGE

Activity Name: Software Essay B-20
Unit Objective 5

Suggested Use of Activity

Following lecture/discussion of the different types of software, this activity can be assigned as homework. Students may then give oral reports if time permits.

Objectives of Activity

Students will demonstrate an understanding of different types of computer software.

Facilities or Materials Needed

Software Essay Topics worksheet
Pen/pencil and paper

Description of Activity

Students will complete an essay on one of the topics on the following page.

Suggested Length of Activity

Approximately 1 hour

Suggestions for Teacher

Students can be assigned specific questions to avoid duplication. Question 3 can also be assigned by type of software the student will investigate.

Suggestions for Evaluation

Essays should be graded on the adequacy of the points covered.

Name____________________________

ACTIVITY B-20: SOFTWARE ESSAY TOPICS

1. What is an operating system? Why must we have operating systems to run our computers? Briefly describe the parts of an operating system and their functions.

2. Distinguish between systems software and applications software. Give examples of each. What functions are directed by each type of software?

3. Pick one of the following types of applications software. Research two different brands of the type you have chosen. Report on the similarities and the differences you have found. What is the main function of the type of software you have chosen to research?

    Spreadsheets
    Word Processors
    Data Base Management Systems
    Personal Finance Programs
    Communications Software
    Desktop Publishers
    Integrated Software Packages

Activity Name: Field Trip to Computer Store B-21
Unit Objectives 6 and 7

Suggested Use of Activity

This activity can be assigned as a homework activity.

Objectives of Activity

Students should gain an understanding of the use of computer stores for information about hardware.

Facilities or Materials Needed

Field Trip to Computer Store worksheet
Pen or pencil

Description of Activity

Students will visit a computer store and then write a report on the visit.

Suggested Length of Activity

Approximately 1 week

Suggestions for Teacher

The teacher may want to include additional suggested questions to the worksheet. Students can visit the computer stores in groups, but the reports should be written individually.

Suggestions for Evaluation

Essays should be graded on the adequacy of the points covered.

Name___________________________

ACTIVITY B-21: FIELD TRIP TO COMPUTER STORE

Visit a computer store that primarily sells hardware. Report on what kinds (types) of computers you saw there. Ask the salesperson for a demonstration of one of the computers. Report to the class on what you saw.

Suggested questions:

1. What brands of computers do they sell?
2. What components did the demonstrated computer have?
3. How much memory did the demonstrated computer have?
4. What peripherals were available for the demonstrated computer?

Teacher Questions:

5.

6.

7.

Activity Name: Computer Magazine Information About Hardware B-22
Unit Objective 6

Suggested Use of Activity

This activity will show the students the kinds of information that are available using computer magazines as references.

Objectives of Activity

Students should gain an understanding of the information available in computer magazines.

Facilities or Materials Needed

Teacher- or student-supplied computer magazines.
Computer Magazine Information About Hardware worksheet
Pen or pencil

Description of Activity

Students will complete the following essay question.

Suggested Length of Activity

Approximately 1 hour

Suggestions for Evaluation

Essays should be graded on the adequacy of points covered.

Name___________________________

ACTIVITY B-22: COMPUTER MAGAZINE INFORMATION ABOUT HARDWARE

Use a current computer magazine and locate advertisements for various kinds of hardware. Do you think these sources are adequate for making a decision on what types of equipment to purchase?

Activity Name: Sources of Information About Hardware B-23
Unit Objective 6

Suggested Use of Activity

This activity will make students aware of the information they can receive directly from vendors (manufacturers) of computer hardware.

Objectives of Activity

Students will gain an understanding of the advantages and disadvantages of contacting vendors of computer hardware for information.

Facilities or Materials Needed

Sources of Information About Hardware worksheet
Names and addresses of computer hardware vendors.

Description of Activity

Students will contact computer hardware vendors, either by mail or telephone, and request information on their products.

Suggested Length of Activity

Approximately 2 weeks

Suggestions for Evaluation

Essays should be graded on the adequacy of points covered.

Name____________________________

ACTIVITY B-23: SOURCES OF INFORMATION ABOUT HARDWARE

Write or call several vendors of computer hardware and ask for brochures on their equipment. Visit a computer store and ask questions about the same equipment. Which source did you find gave you the most clear information? Which method do you think would be most helpful when looking for a computer system?

Activity Name: Computer Hardware Guest Speaker B-24
Unit Objective 6

Suggested Use of Activity

This activity should be used to give students an understanding of what consulting services do and what value they can be when choosing a computer system.

Objectives of Activity

Students will gain an understanding of the use of consulting services when making choices about computer hardware.

Facilities or Materials Needed.

None.

Description of Activity

Ask someone from a consulting service to come and speak to the class about choosing hardware. Ask him/her to tell the class how to best choose this kind of service and why you would use this kind of service instead of doing your own investigating.

Suggested Length of Activity

One 50-minute class period

Suggestions for Teacher

The day after the guest speaks, you can have a discussion about what he/she said and compare and contrast the different ways to go about investigating hardware before you make a purchase.

Suggestions for Evaluation

This activity would not be evaluated.

Activity Name: Field Trip Report About Software B-25
Unit Objective 7

Suggested Use of Activity

This activity would be assigned as homework.

Objectives of Activity

Students should gain an understanding of the kinds of information they can receive at a software store when deciding to purchase software for their computer.

Facilities or Materials Needed

Field Trip Report About Software worksheet
Pen or pencil

Description of activity

Students will visit a local software store and write an essay answering the questions listed

Suggested length of activity

Approximately 1 week

Suggestions for Teacher

Students could visit the computer store in small groups, or a field trip could be arranged for the entire class. After this, they could write their papers in answer to the questions.

Suggestions for Evaluation

Essays should be graded on the adequacy of the points covered.

Name ____________________________

ACTIVITY B-25: FIELD TRIP REPORT ABOUT SOFTWARE

Visit a computer store that primarily sells software. Do they carry software for many different kinds of machines? Ask for a demonstration of a particular program that interests you. Report on the demonstration to the class. Do you think this is a good source of information about software? Why or why not?

Activity Name: Computer Club Information About Software B-26
Unit Objective 7

Suggested Use of Activity

This activity can be done as homework.

Objectives of Activity

Students will gain an understanding of the use of computer clubs for software needs.

Facilities or Materials Needed

Computer Club Information worksheet
Names and addresses of local area computer clubs.

Description of Activity

Students will contact computer clubs and answer the questions on the worksheet.

Suggested Length of Activity

Approximately 1 week

Suggestions for Evaluation

Essays should be graded on the adequacy of the points covered.

Name____________________________

ACTIVITY B-26: COMPUTER CLUB INFORMATION

Find out about computer clubs in your area. What kind of activities do they offer? Do they offer any information about software? Can you purchase software through them?

Activity Name: Public Domain Software Information B-27
Unit Objective 7

Suggested Use of Activity

This activity can be done as homework.

Objectives of Activity

Students will gain an understanding of the use of public domain software.

Facilities or Materials Needed

Public Domain Software Information worksheet
Names and addresses of public domain vendors.

Description of Activity

Students will contact public domain vendors and answer the essay on the following page.

Suggested Length of Activity

Approximately 1 week

Suggestions for Evaluation

Essays should be graded on the adequacy of the points covered.

Name______________________

ACTIVITY B-27: PUBLIC DOMAIN SOFTWARE INFORMATION

What is public domain software? What are the advantages and disadvantages of using public domain software?

Activity Name: Future Trends in Hardware and Software B-28
Unit Objective 8

Suggested Use of Activity

Following lecture/discussion of future trends, students will complete the worksheet.

Objectives of Activity

Students should be able to identify some of the future trends in computers with 100% accuracy.

Facilities or Materials Needed

Future Trends worksheet
Pen or pencil

Description of Activity

Students will fill in the Future Trends worksheet. This would be given as a quiz.

Suggested Length of Activity

Approximately 20 minutes

Suggestions for Evaluation

This activity can be graded as a quiz.

Name__________________________

ACTIVITY B-28: FUTURE TRENDS

DIRECTIONS: Fill in the blanks with the correct answer.

1. The ability of the computer to learn from its experiences is ____________________.

2. The idea that all sales, bills and checks will be processed electronically is referred to as the ____________________.

3. The ability to put several million transistors on one chip is called ____________________.

4. ____________________ refers to a computer having several arithmetic/logic and control units operating at the same time.

5. The ability to tell a computer what to do in English instead of program code is called ____________________.

6. A(n) ____________________ translates voice into language the computer can understand.

7. The use of mechanical devices that are controlled by a computer and used for repetitive tasks, mostly in manufacturing, is called ____________________.

8. ____________________ sends messages over phone lines, through networks, or by satellite from computer to computer.

9. Working at home using a computer, instead of at the office or factory, is referred to as the ____________________.

10. A group of computers connected by phone lines is called a(n) ____________________.

ACTIVITY B-28: FUTURE TRENDS
(TEACHER'S COPY)

DIRECTIONS: Fill in the blanks with the correct answer.

1. The ability of the computer to learn from its experiences is ARTIFICIAL INTELLIGENCE .
2. The idea that all sales, bills and checks will be processed electronically is referred to as the CASHLESS SOCIETY .
3. The ability to put several million transistors on one chip is called VERY LARGE SCALE INTEGRATION .
4. PARALLEL PROCESSING refers to a computer having several arithmetic/logic and control units operating at the same time.
5. The ability to tell a computer what to do in English instead of program code is called NATURAL LANGUAGE PROCESSING .
6. A(n) VOICE DIGITIZER translates voice into language the computer can understand.
7. The use of mechanical devices that are controlled by a computer and used for repetitive tasks, mostly in manufacturing, is called ROBOTICS .
8. ELECTRONIC MAIL sends messages over phone lines, through networks, or by satellite from computer to computer.
9. Working at home using a computer, instead of at the office or factory, is referred to as the ELECTRONIC COTTAGE .
10. A group of computers connected by phone lines is called a(n) NETWORK .

Activity Name: Future Trends Essay B-29
Unit Objective 8

Suggested Use of Activity

One of the essays can be assigned as homework.

Objectives of Activity

The students should formulate their own ideas of what computing will be like in the future.

Facilities or Materials Needed

Future Trends Essay worksheet

Description of Activity

Students will answer the essay question.

Suggested Length of Activity

A 50-minute class period

Suggestions for Teacher

This activity can be done as an in-class activity rather than as homework.

Suggestions for Evaluation

Essays should be graded on the adequacy of points covered.

Name______________________________

ACTIVITY B-29: FUTURE TRENDS ESSAY

1. Discuss your ideas about the future of computers. What new type of hardware or software might be developed? How do you feel computers will affect our lives in the future.

2. Robots will do many special or difficult tasks in manufacturing plants in the future. Unfortunately, this may eliminate some jobs currently being done by human workers. How will future workers have to be trained in order to find jobs? What can be done to help workers who have lost their jobs due to technology?

3. In your opinion, what is the long-term effect of the computer revolution on society? What are the possibilities and your expectations for the future?

Activity Name: Trends: Yesterday and Today in Hardware and Software
Unit Objective
B-30

Suggested Use of Activity

The following essay can be assigned as homework.

Objectives of Activity

The students will find the similarities and differences between computers of the past and present.

Facilities or Materials Needed

Trends: Yesterday and Today worksheet

Description of Activity

Students will answer the essay question.

Suggested Length of Activity

A 50-minute class period

Suggestions for Teacher

This activity can be done as an in-class activity rather than as homework.

Suggestions for Evaluation

Essays should be graded on the adequacy of points covered.

Name____________________________

ACTIVITY B-30: TRENDS: YESTERDAY AND TODAY

There have been many technological improvements in computing in the last 25 years. Compare and contrast computers of yesterday and today. What are the differences? What are the similarities? What do you predict computers will be like in the next 25 years?

Activity Name: Future Trends Crossword Puzzle B-31
Unit Objective 8

Suggested Use of Activity

Following a discussion of future trends in computers, the crossword puzzle may be used.

Objectives of Activity

The students will show an understanding of the various terms associated with future computer trends.

Facilities or Materials Needed

Future Trends Crossword Puzzle
Future Trends Crossword Puzzle Clue Sheet
Pencil

Description of Activity

Students will complete the crossword puzzle.

Suggested Length of Activity

Approximately 30 minutes

Suggestions for Teacher

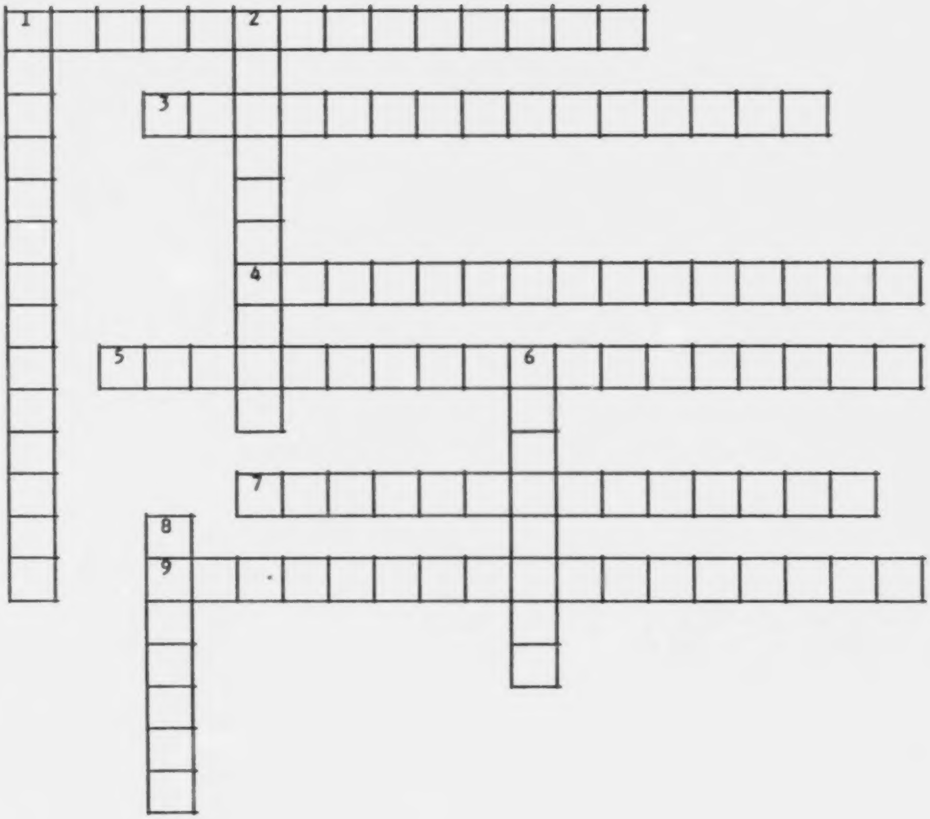
This activity can also be assigned as homework.

Suggestions for Evaluation

Suggested evaluation of this activity is self-correction by students. Solution can be put on a transparency for ease of correction.

Name____________________________

ACTIVITY B-31: FUTURE TRENDS CROSSWORD PUZZLE



Name____________________________

ACTIVITY B-31: FUTURE TRENDS CROSSWORD PUZZLE CLUE SHEET

ACROSS CLUES

1. The type of integration that allows us to put several million transistors on one chip.
3. The processing that allows us to give the computer instructions in plain English.
4. All sales, bills and checks will be processed electronically in this type of society.
5. A computer having several arithmetic/logic and control units operating at the same time.
7. The ability to send messages over phone lines, through networks or by satellite.
9. Working at home, using a computer, instead of at an office.

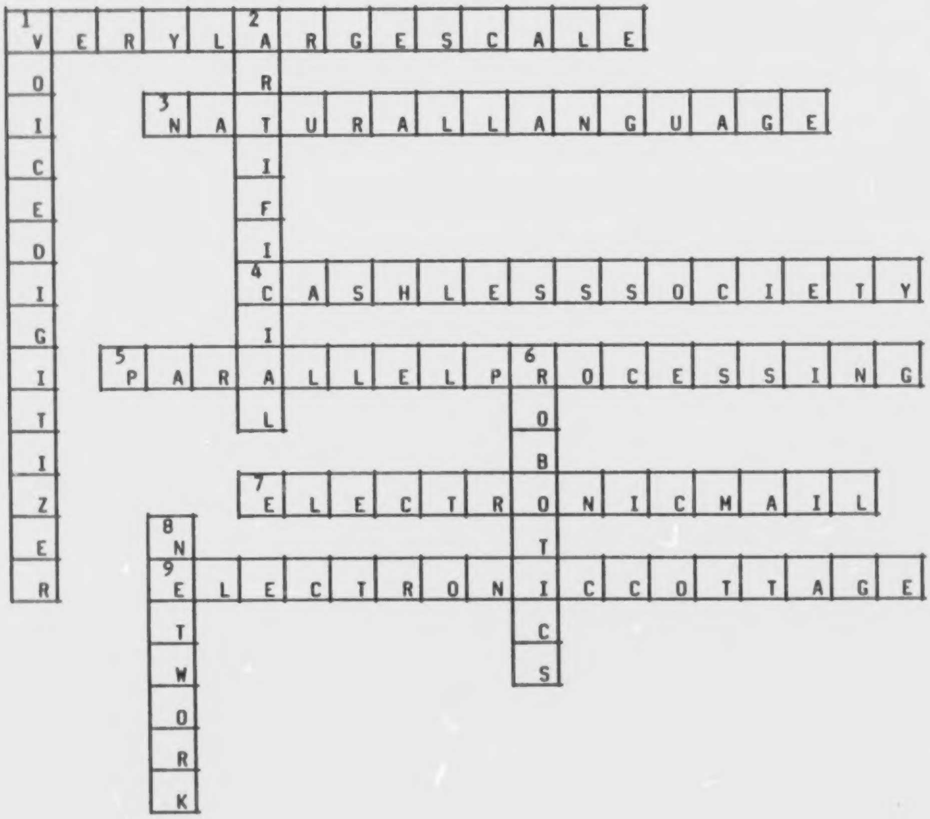
DOWN CLUES

1. Translates voice into a language that the computer can understand.
2. The type of intelligence that allows the computer to learn from its experiences.
6. The use of mechanical devices, particularly in manufacturing.
8. A group of computers connected by phone lines or a cable.

ACTIVITY B-31: FUTURE TRENDS CROSSWORD PUZZLE
(TEACHER'S COPY)

WORD LIST: TRENDS

Artificial
Cashlesssociety
Electronicmail
Electroniccottage
Naturallanguage
Network
Parallelprocessing
Robotics
Verylargescale
Voicedigitizer


1 VERYLARGESCALE
1 VOICEDIGITIZER
2 ARTIFICIAL
3 NATURALLANGUAGE
4 CASHLESSSOCIETY
5 PARALLELPROCESSING
6 ROBOTICS
7 ELECTRONICMAIL
8 NETWORK
9 ELECTRONICCOTTAGE

UNIT C: GETTING READY FOR COMPUTER SOFTWARE APPLICATIONS

UNIT PLAN

Introduction

The following activities are designed to help the students prepare the computer and data disks for storage. The teacher will need to demonstrate the procedure for turning on the computer, initializing or formatting blank data disks, and inserting the application software in the disk drive(s). The procedure will vary, depending upon the number of disk drives the computer system has and the number of application disks needed to load the application software.

Topical Outline of Unit

GETTING READY FOR COMPUTER SOFTWARE APPLICATIONS

1. *Getting the Computer Ready (Initial Operations)

2. *Getting the Software Ready (Formatting Blank Disks)

Unit Objectives

After completion of this unit, the student will be able to

1. Turn on the computer and the monitor.
2. Load application software in a single or dual disk drive system.
3. List the steps necessary to turn on the computer system and load the application software.
4. Format blank data disks with either a single or dual disk drive system.

SUGGESTED STUDENT ACTIVITIES

Activity Name: Getting the Computer Ready C-1
Loading the Application Software
Unit Objectives 1, 2 and 3

Suggested Use of Activity

This activity is intended as a demonstration to the whole class with students then readying their computers with the application software.

Objectives of Activity

Upon the completion of this activity, students should be able to turn on their computers and monitors, load the application software using either single or dual disk drives, and list the steps.

Facilities or Materials Needed

Computer with monitor
1 or 2 disk drives
Application software
Readying the Computer worksheet (save for Activity C-2)
Pen or pencil
Chalkboard or overhead

Description of Activity

1. The teacher will demonstrate on a demonstrator computer how to turn on the monitor, how to insert the application software into the disk drive, and how to turn on the computer.
2. The teacher will list on the chalkboard or overhead the steps to turn on the computer.
3. Students will list the steps on the Readying the Computer worksheet.
4. Students will then turn on their monitors and computers with the application software. Students will use the Readying the Computer worksheet as an aid. The students may have to share the application software if there are not sets for each workstation. Let the students assist each other when turning on the system while the teacher walks around the room observing and helping where needed.
5. The teacher will demonstrate how to safely remove the application software and how to turn off the system. Again have the students list these steps in the next section of their worksheet.

6. The teacher will list the steps for removing software and turning off the computer system on the chalkboard or overhead.
7. Students will then list the steps for removing software and turning off the computer system on the worksheets.
8. Students will turn off the computer system using the worksheets as a reference.
9. Have the students repeat Steps 4 and 8 for reinforcement.

Suggested Length of Activity

A 50-minute class period

Suggestions for Teacher

The teacher could collect the worksheets to hand out to the students again the next class session.

Suggestions for Evaluation

The teacher could quiz the students the second class session on the steps for turning on the computer and loading the application software. Points could be assigned for the quiz.

NAME______________________________

ACTIVITY C-1: READYING THE COMPUTER

Steps to Turn on Computer System
and Load Application Software:

Steps to Turn off the Computer System
and Remove Application Software:

Steps for Initializing or Formatting
Blank Disks:

Name______________________________

ACTIVITY C-1: READYING THE COMPUTER
(Continued)

Steps to Get Blank Screen
for Application Activity:

211

Activity Name: Initializing or Formatting Blank Disks C-2
Unit Objective 4

Suggested Use of Activity

This activity is intended for all students and should precede the completion of other application activities. The teacher should suggest that each student have at least two initialized or formatted blank disks upon which to save their work. The teacher should stress the importance of having backup copies on separate disks of all the work complete in case a disk has bad sectors or one disk becomes damaged.

Objectives of Activity

Upon the completion of this activity, students should be able to initialize or format blank disks and bring up a blank screen upon which they may begin the work.

Facilities or Materials Needed

Computer with monitor
1 or 2 disk drives
Application software
Readying the Computer worksheet (from Activity C-1)
2 blank disks
Chalkboard or overhead

Description of Activity

1. Students will turn on their computer system following the steps written on the Readying the Computer worksheets.
2. The teacher will list on the chalkboard or overhead each step necessary to obtain the menu that allows the operator to initialize or format blank disks.
3. Sudents will list these steps in the Initializing or Formatting section of the Readying the Computer worksheets.
4. Students will then use these steps on the worksheets to initialize or format the first blank disk.
5. Students will follow the initializing or formatting steps from the worksheets and initialize or format the second blank disks.
6. The teacher will then list on the chalkboard or overhead all the steps necessary to obtain the blank screen upon which they may begin an activity (word processing, spreadsheet, data base, etc.)
7. Students will list these steps in the last section of the worksheets.
8. Students may then begin the application activities.

Suggested Length of Activity

Approximately 20 minutes

Suggestions for the Teacher

The teacher may use this activity with any application activity.

Suggestions for Evaluation

The teacher may quiz the students the next class session on the steps to initialize or format blank disks. Points may be assigned for this quiz.

UNIT D: WORD PROCESSING APPLICATIONS

UNIT PLAN

Introduction

The following activities progress from simple to complex and should be assigned in the order presented. The starred activities below are required to give the student a sound understanding of basic word processing. The other activities could be optional as class time permits. Any of these activities may be used to introduce a function on the word processor, and additional appropriate activities may be added from other sources to reinforce the concept.

Topical Outline of Unit

WORD PROCESSING APPLICATIONS

1. *Understanding Word Processing
2. *Setting Margins
3. *Setting Tabs
4. *Setting Line Spacing
5. *Justifying Margins
6. *Centering Data
7. Finding and Replacing a Letter, Word or Sentence
8. *Deleting a Letter, Word, Sentence or Paragraph
9. *Inserting a Letter, Word, Sentence or Paragraph
10. *Moving a Word, Sentence or Paragraph within a Document
11. Moving a Sentence or a Paragraph or Merging Documents
12. Moving Data Between Documents
13. *Formatting Short Reports
14. Formatting Reports with Footers, Headers, Superscripts and Subscripts
15. Formatting Envelopes

16. Formatting Labels

17. *Spelling Check

Unit Objectives

At the end of the unit the student should be able to

1. Format a blank disk with 100% accuracy.
2. Format a short modified-block letter, use a spelling check, and print out the letter with 100% accuracy within 45 minutes.
3. Format a one-page report with a centered title using the spelling check within 40 minutes with 100% accuracy.
4. Prepare 5 form letters using boilerplate paragraphs within 30 minutes with 100% accuracy.
5. Produce a two-page report with footers and headers within 60 minutes with 100% accuracy.

SUGGESTED STUDENT ACTIVITIES

Activity Name: Understanding Word Processing D-1
Unit Objective 1

Suggested Use of Activity

The teacher should prepare a form letter and a separate table that would be placed into the letter. Show the students the two separate documents printed out. Next show a printout of the two documents merged.

Objectives of Activity

The students should be able to identify the separate information (the letter and the table) on the merged document printout.

Facilities or Materials Needed

Computer
1 or 2 disk drives
1 or 2 formatted disks
Word processing software
Word processing manual
Printouts of documents and merged documents

Description of Activity

The teacher will demonstrate the correction of errors on each of two documents, a form letter and a table, the saving of the documents onto disk, and then the merging and printing of the two documents into a letter.

Suggested Length of Activity

Approximately 40 minutes

Suggestions for Teacher

The teacher may use teacher-made or published material for these demonstration documents.

Activity Name: Margin and Tab Settings D-2
Unit Objectives 2 and 3

Suggested Use of Activity

This activity is required to familiarize the students with the margin and tab setting procedures for the software. The teacher must refer the student to the software manual section that explains the margin and tab setting before beginning this exercise.

Objectives of Activity

Students should be able to key in a short note with margins set for a 50-space (or 5-inch) line and a tab at the center point within 10 minutes with 100% accuracy. The students should be able to save the short note on disk within 1 minute with 100% accuracy. The student should be able to reset the margins for two different line lengths with new tabs at the center point of the line within 2 minutes with 100% accuracy.

Facilities or Materials Needed

Computer
1 or 2 disk drives
Formatted disk
Word processing software
Word processing manual
Printer
Paper (continuous-form or single sheet)
Margin and Tab Settings worksheet

Description of Activity

Use the copy and instructions described in Activity D-2 to set margins and tabs for the text.

Suggested Length of Activity

Approximately 40 minutes

Suggestions for Teacher

The teacher should have the student refer to the sections of the software manual that pertain to the activity. The teacher could find the sections in the software manual, allow time for the student to read them, and then demonstrate the margin and tab settings. The students should be allowed time to key in and change the margin and tab settings and reformat the text if necessary as outlined above.

Suggestions for Evaluation

The teacher should print out copies of the documents for the students. The margin and tab settings on the printouts could be checked more easily. Or the student could notify the teacher when the document is ready to be viewed on the screen so the teacher can verify that the student successfully changed the margin and tab settings.

Name______________________

ACTIVITY D-2: MARGIN AND TAB SETTINGS

DIRECTIONS: The following copy is to be prepared using the instructions below to set margins and tabs for text.

Current date

Registrar
NIU
Altgeld
DeKalb, IL 60115

Dear Registrar:

Please send my transcript to: Dr. Jarod Hall, Pine Bluff High School, Pine Bluff, AK 71601.

My Social Security Number is 001-56-9870.

I have enclosed a check for the $3.50 transcript fee.

Sincerely,

(Student's name)

INSTRUCTIONS:

1. Read the software manual for instructions for margin and tab setting. Your teacher will tell you what pages are to be read.
2. Boot the system with the word processing software in Drive 1.
3. Set the margin for a 50-space (or 5-inch) line.
4. Set the tab for the date at the center of the line length.
5. Tab from the left margin to the tab setting for the date. (The center would be half of the 50-space (or 5-inch) line or 25 spaces in from your left margin setting.)
6. Type the current date.
7. Return 4 times.
8. Key in:
   Registrar
   NIU
   Altgeld
   DeKalb, IL 60115

Name____________________________

ACTIVITY D-2: MARGIN AND TAB SETTINGS
(Continued)

9. Return 2 times
10. Key in:
    Dear Registrar:
11. Return 2 times.
12. As you approach the right margin, do not return. The computer will return for you because of the word-wrap feature. The word-wrap feature automatically places a word on the next line if the word is too long to fit in the space remaining on the line as you approach the right margin. Between the paragraphs, return twice.
    Key in the paragraphs:

    Please send my transcript to: Dr. Jarod Hall, Pine Bluff High School, Pine Bluff, AK 71601.

    My Social Security Number is 001-56-9870.

    I have enclosed a check for the $3.50 transcript fee.
13. Return 2 times.
14. Tab.
15. Key in:
    Sincerely
16. Return 4 times and tab.
17. Type your name and return.
18. Return to the top of the screen with the up-arrow key.
19. Save the keyed-in copy on the data disk. Check the software manual and follow the steps outlined for saving on disk.
20. Set the margin for a 60-space (or 6-inch) line. Notice how the lines adjust to fill the new margins. If the lines do not automatically adjust to the new format, check the software manual for the correct reformatting procedure.
21. Clear the old tab.
22. Set a new tab for the center of the 60-space (or 6-inch) line.
23. Note how the date moves to the new tab setting once the text has adjusted to the new margins.
24. Save this on disk under a new file name.
25. Return to the top of the screen with the up-arrow key.
26. Set a new margin for a 70-space (or 7-inch)line and notice how the lines adjust to fill the new margins.
27. Clear the old tab.
28. Set a new tab for the center of the 70-space (or 7-inch) line.
29. Note how the date moves to the new tab setting.
30. Save this on disk under a third file name.

Activity Name: Setting Line Spacing D-3
Unit Objective 4

Suggested Use of Activity

The teacher must require the student to complete the following activity. An additional letter may be used from published materials to reinforce this activity.

Objectives of Activity

The student must be able to format a short letter with a double-spaced table within 30 minutes with 100% accuracy.

Facilities or Materials Needed

Computer
1 or 2 disk drives
1 or 2 formatted disks
Word processing software
Word processing manual
Paper (continuous-form or single sheet)
Setting Line Spacing worksheet

Description of Activity

The student must read the section in the software manual to set the margins for a 60-space (or 6-inch) line. The software is set for single spacing when loaded into the computer memory. When it is necessary to change the line spacing, the student must refer to the section in the manual to change the line spacing. Use the copy in Activity D-3 as you follow these instructions to set the line spacing.

Suggested Length of Activity

Approximately 40 minutes

Suggestions for Teacher

The teacher should have the student refer to the sections of the software manual that pertain to saving a file and to printing. The teacher should collect both data disks from each student.

Suggestions for Evaluation

The teacher should review the letter and return the letter with comments by the next class session. The teacher could instruct students to complete a long letter with a table to reinforce the margin setting, tab setting and line spacing of this activity.

Name_______________________

ACTIVITY D-3: SETTING LINE SPACING

DIRECTIONS: The following copy is to be prepared using the instructions below to set line spacing.

Current date

Mr. J. V. Smith, Jr.
1024 South First Street
Minneapolis, MN 55900

Dear Mr. Smith:

Our manufacturing plant makes small engines. We currently use the "Diagnostic Manufacturer" software to test each engine as it comes off the assembly line.

The Manufacturer's Association has listed you as a programmer of diagnostic software for small engines. We are interested in evaluating two of the softwares that you now have on the market:

SOFTWARE	SYSTEM	COMPUTER
SE Diagnostics	DBMS	Honeywell
Engine's Friend	DBMS	Honeywell

Would you please send us the above software for review.

Sincerely,

Rosa Gonzalez
Vice President-Production

xx

INSTRUCTIONS:

1. Record the time you started this exercise.
2. Boot the system.
3. Set the margins for a 60-space (or 6-inch) line.

Name____________________________

ACTIVITY D-3: SETTING LINE SPACING
(Continued)

4. Set the tab for the date.
5. Key in the current date.
6. Return 4 times.
7. Key in the letter address:

    Mr. J. V. Smith, Jr.
    1024 South First Street
    Minneapolis, MN 55900

8. Return 2 times.
9. Key in the salutation:

    Dear Mr. Smith:

10. Return 2 times.
11. Key in the letter:

    Our manufacturing plant makes small engines. We currently use the "Diagnostic Manufacturer" software to test each engine as it comes off the assembly line.

    The Manufacturer's Association has listed you as a programmer of diagnostic software for small engines. We are interested in evaluating two of the softwares that you now have on the market:

12. Check the manual to reset the line spacing to double spacing, set tabs for the table and key in the following:

SOFTWARE	SYSTEM	COMPUTER
SE Diagnostics	DBMS	Honeywell
Engine's Friend	DBMS	Honeywell

13. Clear all tabs and reset the tab at the center.
14. Change the line spacing back to single spacing to complete keying in the last paragraph of the letter:

    Would you please send us the above software for review.

15. Return 2 times.
16. Tab to the center.
17. Key in the following complimentary close:

    Sincerely,

18. Return 4 times.
19. Tab to the center.
20. Key in the following closing line:

    Rosa Gonzalez

21. Return once.
22. Tab to the center.
23. Key in the following closing line:

    Vice President-Production

Name______________________

ACTIVITY D-3: SETTING LINE SPACING
(Continued)

24. Return 2 times.
25. At the left margin, key in your own initials where the xx's appear in this activity.
26. Return.
27. Insert the formatted data disk in Drive 2. If you have only one drive, remove the software disk and insert the formatted data disk into Drive 1.
28. Check the manual for the method to save test onto disk.
29. Save onto disk.
30. After the file is saved on the data disk, remove the disk and return it to its paper jacket.
31. Insert the second formatted data disk into Drive 1 or Drive 2.
32. Repeat Steps 29 and 30.
33. Ask your teacher to show you how to print.
34. Print the letter and remove the letter from the printer.
35. Record the time you started and ended this activity in the upper right-hand corner of the letter.
36. Turn off the computer, monitor and printer.
37. Remove the disk(s) from the data drive(s).
38. Turn in the printed copy of the letter, word processing software and your two data disks to your teacher.

Activity Name: Centering and Justifying Margins D-4
Unit Objecitves 5 and 6

Suggested Use of Activity

The teacher must require students to complete the following activity. An additional one-page report may be used from published materials to reinforce this activity.

Objectives of Activity

Students should be able to key in a one-page report without footnotes and justify the left and right margins and center the title within 40 minutes with 100% accuracy.

Facilities or Materials Needed

Computer
1 or 2 disk drives
1 or 2 formatted disks
Word processing software
Word processing manual
Paper (continuous-form or single sheet)
Centering and Justifying Margins worksheet

Description of Activity

The teacher will tell students what pages in the manual to read about centering and justifying. Students should use the copy in Activity D-4 and follow instructions given to set margins, center the title and justify the margins.

Suggested Length of Activity

A 50-minute class period

Suggestions for Teacher

The teacher should tell students the page numbers for the sections of the software manual that pertain to centering, justifying and printing and allow time for students to read these pages.

Suggestions for Evaluation

The teacher should review the printout of the short report. Use your own procedure for grading reports. Time could be considered in the evaluation and 100% accuracy must be required.

Name____________________________

ACTIVITY D-4: CENTERING AND JUSTIFYING MARGINS

DIRECTIONS: Your teacher will tell you what pages in the manual to read about centering and justifying. Use the copy below as you follow the instructions to set margins, center the title and justify the margins.

INSTRUCTIONS:

1. Read the software manual for instructions to center copy.
2. Record the time you begin this activity.
3. Boot the system with the word processing software.
4. Most software has margins of 1 inch and single spacing when the software is loaded. Ask your teacher if you must change the settings.
5. Code to center the title. Your manual should be open to the instructions.
6. Return.
7. Key in:
   WRITING A CHECK
8. Return 3 times.
9. Read the manual on instructions to justify copy.
10. Code to justify the margins and return.
11. Code to double space the lines and return.
12. Key in the text:

Most people maintain at least one checking account. The account is used to pay bills, write checks for gifts, make purchases or obtain cash. The checking account is the most popular method of handling cash and is the safest method of paying bills by mail. Canceled checks also provide proof of payment when a dispute arises over the payment of a bill.

Checks, however, must be written out carefully to protect the individual from embezzlement. All checks must be written in ink, never pencil or erasable ink. The name of the person or business to whom the check is made out, the payee, appears after "Pay to the order of." A line should be drawn after writing the payee's name to the dollar sign, $. The amount of the check is written in figures after the dollar sign wih the first figure written close to the dollar sign and the cents amount written as a fraction over 100. If the amount is in even dollars, write no/100 or 00/100.

The next line is provided to write the check amount in words and the cents amount as a fraction. If there is any blank space between the fraction and "Dollars," draw a line to "Dollars" after the amount written in words. Last, write your signature on

Name____________________________

ACTIVITY D-4: CENTERING AND JUSTIFYING MARGINS
(Continued)

the line in the lower right-hand corner of the check. The line in the lower left-hand corner, the "Memo" line, is provided for the account holder's notation about the purpose of the check.

13. If there is only one disk drive, remove the word processing software from Drive 1 and insert the formatted data disk into Drive 1. If there are two disk drives, insert the formatted disk into Drive 2.
14. Save the work on the formatted data disk.
15. Remove the data disk and place it back in the paper jacket.
16. To back up the file on a second disk, insert the second formatted data disk into Drive 1 or Drive 2.
17. Repeat Steps 14 and 15.
18. Print the report.
19. Remove the report from the printer.
20. Write in the upper right-hand corner of the report the time you began and ended this activity.
21. Turn off the computer, monitor and printer.
22. Hand in the printed report, the software disk and the two data disks to your teacher.

2..7

Activity Name: Finding and Replacing a Letter, Word or Sentence D-5
Unit Objective 7

Suggested Use of Activity

The teacher may use this activity as time permits. This activity can be completed by the average and above-average student.

Objectives of Activity

The student should be able to find and replace an individual letter, word, group of words or sentence within 40 minutes with 100% accuracy.

Facilities or Materials Needed

Computer
1 or 2 disk drives
1 or 2 formatted blank disks
Word processing software
Word processing manual
Paper (continuous-form or single sheet)
Find and Replace worksheet

Description of Activity

The teacher will tell students the page numbers of the manual to read for finding and replacing text. Students will use the copy in Activity D-5 and follow given instructions to find and replace text.

Suggested Length of Activity

A 50-minute class period

Suggestions for Teacher

The teacher must tell the student the pages to read for this activity before the student begins. Stress that the find and replace activity comes in handy when a word or phrase has been incorrectly cited throughout text. Indicate that this function assures the operator that all occurrences will be found and corrected.

Another letter from published material for which the teacher gives the student changes should be used for reinforcement.

Suggestions for Evaluation

Grade the letter as the teacher usually would. Accuracy must be 100%, and completion time must be considered in the grading.

Name____________________________

ACTIVITY D-5: FIND AND REPLACE

DIRECTIONS: Your teacher will tell you the page numbers of the manual to read for finding and replacing text. Use the copy below as you follow these instructions to find and replace text:

INSTRUCTIONS:

1. Read the manual for instructions to find and replace text.
2. Boot the system.
3. Record your beginning time.
4. Key in the following letter:

Current date

Mr. John Cooper
Cooper and Sons
4200 Main Street
Peoria, IL 61601

Dear Mr. Cooper:

We know the main goal of your company is to make money. The First Bank of Peoria is willing to help your company save money at the highest interest rate. When your company needs money, come see us at First Bank. You will find our services outstanding. At First Bank you will get the best competitive interest rate of any bank in the county.

See Carroll Anderson of our business loan department. He will be willing to sit down with your people, review your statements and make recommendations for raising cash. Remember, we are here for you and your company. Come see us today at First Bank of Peoria.

Sincerely,

W. W. Kruchek
President

xx

Name______________________________

ACTIVITY D-5: FIND AND REPLACE
(Continued)

5. Set the necessary margins, tabs and line spacing.
6. In the first paragraph find and replace "your company" with "Cooper and Sons." Select to automatically find and replace all occurrences of "your company" with "Cooper and Sons."
7. Use the up-arrow key or function key to return to Line 1 of the text.
8. In the first paragraph find the sentence "You will find our services outstanding." and replace it with nothing.
9. In the first paragraph find "First Bank" and replace it with "First National Bank" and replace all occurrences of "First Bank" with "First National Bank."
10. Save the letter on both data disks.
11. Print the letter.
12. Note your ending time.
13. Record your beginning and ending time on the printout.
14. Turn off your system.
15. Turn in the printout, word processing software and the two data disks to your teacher.

ACTIVITY D-5: FIND AND REPLACE
(TEACHER'S COPY)

Current Date

Mr. John Cooper
Cooper and Sons
4200 Main Street
Peoria, IL 61601

Dear Mr. Cooper:

We know the main goal of Cooper and Sons is to make money. The First National Bank of Peoria is willing to help Cooper and Sons save money at the highest interest rate. When Cooper and Sons needs money, come see us at First National Bank. At First National Bank you will get the best competitive interest rate of any bank in the country.

See Carroll Anderson of our business loan department. He will be willing to sit down with your people, review your statements, and make recommendations for raising cash. Remember, we are here for you and Cooper and Sons. Come see us today at First National Bank of Peoria.

Sincerely,

W. W. Kruchek
President

xx

Activity Name: Deleting a Letter, Word, Sentence and Paragraph D-6
Unit Objective 8

Suggested Use of Activity

The teacher should require students to complete this activity of deleting a letter, word, sentence and paragraph. A rough draft of a letter or report written by a student or teacher or from published material should be used to reinforce this activity.

Objectives of Activity

Students must be able to key in and delete indicated letters, words, sentences and paragraph in an unbound report within 40 minutes with 100% accuracy.

Facilities or Materials Needed

Computer
1 or 2 disk drives
1 or 2 formatted disks
Word processing software
Word processing manual
Paper (continuous-form or single sheet)
Deleting Exercises worksheets

Description of Activity

The teacher will tell students what pages of the manual to read for deleting letters, words, sentences and paragraphs. Students will use the copy in Activity D-6 to follow instructions given to delete letters, words, sentences and paragraph from the text.

Suggested Length of Activity

A 50-minute class period

Suggestions for Teacher

The teacher should assign for reading the page numbers of the manual for deleting letters, words, sentences and paragraphs. Tell students that one delete function is used for letters and words while a more complicated delete function is used for sentences and paragraphs.

The teacher may want to provide students with disks having a prerecorded copy of the text.

Suggestions for Evaluation

The teacher should use the method used for grading two-page reports. The completion time should be considered in the evaluation. Accuracy must be 100%.

Name____________________________

ACTIVITY D-6: DELETING EXERCISES

DIRECTIONS: Your teacher will tell you what pages of the manual to read for deleting letters, words, sentences and paragraphs.

INSTRUCTIONS:

1. Record the time you begin this activity.
2. Boot the system with the word processing software.
3. Key in the necessary codes to center and type a two-page report.
4. Key in and center the title:
   BUDGETING
5. Return.
6. Change the codes as necessary.
7. Key in the text:

Budgeting is a recipe for income management. Budgeting allowss the indiividual to live well but within the income earned yet still pay all the bills and provide for savings and inevestmentss..

A budget should be flexible to handle the periodic increased expendituress for inssurances, tuiition, giffts, medicall and vacation expenses expenses.

Successful budgeting first involves listing all recent current expenses and the figures amounts. These bills will then be brought under control. These expenses should be separated into fixed and variable expenses. Fixxed expenses are those that are always the same amount each month; for example, mortgage/rent, installment loans and savings. The vairiable expenses are those that nevere are the same amount each month, such as food, entertainment, clothing and utilities (gas, electricity and phone).

Once the expenses are classified into fixed and variable, the budtget planner will determine the amount of net income income left after all the fixed expenses are deducted from the monthly gross income. The remaining income may then be allocattted to the variables. The remaining income may then be allocattted to the variables. Realistic amounts should be assigned to each variable expense.

Name________________________

ACTIVITY D-6: DELETING EXERCISES
(Continued)

Each month canceled checks or receipts should be matched to each category of fixed and variable expenses to determine how well the budget has been followed. Adjustments may need to be made in the savings, clothing or entertainment budgeted amounts if the the actual expenditures are either too high or too low.

Once the expenses are classified into fixed and variable, the budget plannter will determine the amount of net income amount of income left after all the fixed expenses are deducted from the monthly net income. The remiaining incoame may then be allocatttted to the variables. Realistic amounts should be assigned to each variable expense.

All budgetets must be reviewed perodically. Aan unworkable budget will be ignored, and a regular savings plan by may be forfeited with the worker becom ding a slave to the monthly bills. This must not happen! Keep the budget simple and realistic so it is workable, providing the best living possible within the income.

8. Use the up-arrow key to return the screen to the beginning of the text.
9. Proofread the text on the screen.
10. Use the delete key or delete function to delete individual characters. In the first paragraph there are 5 characters to delete.
11. Repeat using the same keys for the second paragraph.
12. Repeat the procedure for deleting individual letters and words.
13. Continue deleting individual letters, words and sentences through the fifth paragraph.
14. Delete the sixth paragraph according to the software manual instructions for deleting blocks of material.
15. Complete the editing in the seventh paragraph.
16. Save the edited (corrected) two-page report on a formatted data disk.
17. Again, save the edited report on your backup disk.
18. Print the report.
19. Remove the printout from the printer

Name_________________________

ACTIVITY D-6: DELETING EXERCISES
(Continued)

20. Record the beginning time and the ending time for this activity in the upper right-hand corner of the printout.
21. Turn off the computer, monitor and printer.
22. Turn in the report, word processing disk and your two data disks to your teacher.

ACTIVITY D-6: DELETING EXERCISES
(TEACHER'S COPY)

BUDGETING

Budgeting is a recipe for income management. Budgeting allows the individual to live well but within the income earned yet still pay all the bills and provide for savings and investments.

A budget should be flexible to handle the periodic increased expenditures for insurance, tuition, gifts, medical and vacation expenses.

Successful budgeting first involves listing all recent current expenses and the figure amounts. These bills will then be brought under control. These expenses should be separated into fixed and variable expenses. Fixed expenses are those that are always the same amount each month; for example, mortgage/rent, installment loans and savings. The variable expenses are those that never are the same amount each month, such as food, entertainment, clothing and utilities (gas, electricity and phone).

Once the expenses are classified into fixed and variable, the budget planner will determine the amount of net income left after all the fixed expenses are deducted from the monthly gross income. The remaining income may then be allocated to the variables. Realistic amounts should be assigned to each variable expense.

Each month canceled checks or receipts should be matched to each category of fixed and variable expenses to determine how well the budget has been followed. Adjustments may need to be made in the savings, clothing or entertainment budgeted amounts if the the actual expenditures are either too high or too low.

All budgets must be reviewed perodically. An unworkable budget will be ignored; and a regular savings plan may be forfeited, with the worker becoming a slave to the monthly bills. This must not happen! Keep the budget simple and realistic so it is workable, providing the best living possible within the income.

Activity Name: Inserting a Letter, Word, Sentence or Paragraph D-7
Unit Objective 9

Suggested Use of Activity

This insertion activity must be required for all students to complete.

Objectives of Activity

The student should be able to key in the text and make the necessary insertions within 40 minutes with 100% accuracy.

Facilities or Materials Needed

Computer
1 or 2 disk drives
1 or 2 formatted disks
Word processing software
Word processing manual
Paper (continuous-form or single sheet)
Inserting a Letter, Word, Sentence or Paragraph worksheet

Description of Activity

Teacher will tell students the pages to read about inserting words, sentences and paragraphs. Students will use the copy in Activity D-7 and follow these instructions to insert a letter, word, sentence or paragraph.

Suggested Length of Activity

A 50-minute class period

Suggestions for Teacher

The teacher could demonstrate insertion of a letter, space, word, sentence and paragraph on the computer using another prepared letter. Be sure the student is given time to read the manual on insertion. Teacher-made or published rough-draft material could be used to reinforce this activity.

Suggestions for Evaluation

The teacher should use the method employed for grading letters. Include the time in the evaluation. Accuracy must be 100%.

Name____________________________

ACTIVITY D-7: INSERTING A LETTER, WORD, SENTENCE OR PARAGRAPH

DIRECTIONS: Your teacher will tell you the pages to read about inserting words, sentences and paragraphs. Use the copy below as you follow the instructions to insert a letter, word, sentence or paragraph.

INSTRUCTIONS:

1. Read the insertion instructions in the manual.
2. Record beginning time.
3. Boot the system.
4. Key in the following text:

Current date

J. L. Simon
3500 W. Lake Street
St. Joseph, MI 49085

Dear Mr. Simon:

We have some pieces of furniture at LifeStyle located at the corner of Fourth and Lincoln.

Why wait? Come in and browse. Take time to see the line on the mezzaine.

Our line of furniture is the best quality offered in Michigan. Stop in to see us today. Our salespeople are ready to assist you.

Sincerely,

J. B. Jones
Manager

xx

Name_______________________

ACTIVITY D-7: INSERTING A LETTER, WORD, SENTENCE OR PARAGRAPH (Continued)

5. Use the up-arrow key to return to the inside address and insert Mr. before J. L. Simon.
6. Use the up-arrow key to return to the first sentence of paragraph 1. Insert excellent between some pieces.
7. Use the down-arrow key to the third sentence in paragraph 2 and insert fine between the line and n after mezza of the word mezzanine and level after mezzanine.
8. Insert at the end of paragraph 2 but before paragraph return:
   You know that fine furniture lasts a lifetime.
9. In the third paragraph insert Lower between in Michigan.
10. Insert the following paragraph after paragraph 3:
    We accept Visa/MasterCard and American Express credit cards. If you wish to finance through our in-store credit plan, we offer 18% annual percentage to approved customers with the first 90 days interest free.
11. In paragraph 3, sentence 3, insert a space between salespeople to make it 2 words.
12. Save on both data disks.
13. Print the letter.
14. Record the beginning and ending time on the printout.
15. Turn off the system.
16. Turn in the printout, word processing software and data disks to your teacher.

ACTIVITY D-7: INSERTING A LETTER, WORD, SENTENCE OR PARAGRAPH (TEACHER'S COPY)

Current date

Mr. J. L. Simon
3500 W. Lake Street
St. Joseph, MI 49085

Dear Mr. Simon:

We have some excellent pieces of furniture at LifeStyle located at the corner of Fourth and Lincoln.

Why wait? Come in and browse. Take time to see the fine line on the mezzanine level. You know that fine furniture lasts a lifetime.

Our line of furniture is the best quality offered in Lower Michigan. Stop in to see us today. Our sales people are ready to assist you.

We accept Visa/MasterCard and American Express credit cards. If you wish to finance through our in-store credit plan, we offer 18% annual percentage to approved customers with the first 90 days interest free.

Sincerely,

J. B. Jones
Manager

xx

Activity Name: Moving a Word, Sentence or Paragraph Within a Document D-8
Unit Objective 10

Suggested Use of Activity

The teacher must require students to complete moving text within a document.

Objectives of Activity

The student should be able to move information within a document within 40 minutes with 100% accuracy.

Facilities or Materials Needed

Computer
1 or 2 disk drives
1 or 2 formatted disks
Word processing software
Word processing manual
Paper (continuous-form or single sheet)
Moving a Word, Sentence or Paragraph Within a Document worksheets

Description of Activity

The student must read the section in the software manual about moving text and use the copy and instructions found in Activity D-8 to move text.

Suggested Length of Activity

A 50-minute class period

Suggestions for Teacher

The teacher should tell students the pages of the word processing manual to read for instructions about moving copy. The student must read the manual before beginning this activity. Use teacher-prepared or published rough-copy data to reinforce this activity.

Suggestions for Evaluation

The teacher should grade and return the letter with comments before the next class session. Use your own procedure for grading letters. The length of completion time should be considered in the evaluation, and accuracy must be 100%.

Name____________________________

ACTIVITY D-8: MOVING A WORD, SENTENCE OR PARAGRAPH WITHIN A DOCUMENT

DIRECTIONS: Your teacher will tell you the pages to read about moving words, sentences and paragraphs. Use the copy below as you follow the instructions to move text.

INSTRUCTIONS:

1. Read the manual.
2. Boot the system.
3. Record the beginning time.
4. Key in the following text:

Current date

Mrs. Rita Anderson
9524 First Avenue
Fort Worth, TX 76105

Dear Mrs. Anderson:

You are now approaching the sixth month of your health club membership. We are sure that these six months have been a healthful, invigorating time. We know that you have made excellent use of your membership as evidenced from our registration roster.

You should consider renewing your membership for another six months. During this month we are offering a 20% discount membership to all our current members.

Innovative Health Clubs of Texas believes our members will attain a more active, healthful life by maintaining our health plan.

Stop in our office the next time you come to the club to renew your membership.

Enjoy the new olympic-size pool that will open next month.

Sincerely,

Jake H. Irwin
Coordinator

xx

Name__________________________

ACTIVITY D-8: MOVING A WORD, SENTENCE OR PARAGRAPH WITHIN A DOCUMENT (Continued)

5. Move "You should consider" from the beginning of the second paragraph to the beginning of the fourth paragraph before "Stop." Replace the S in "Stop" with a lower case s and change "stop" to "stopping". Change "renewing" in paragraph 2 to "renew."
6. Move "Innovative Health Clubs of Texas believes our members will" at the beginning of the third paragraph to the fifth paragraph before "Enjoy." Remember to capitalize a in "attain" and change the E in "enjoy" to lower case.
7. Move the fourth paragraph after paragraph 5.
8. Combine paragraphs 2 and 3 into one paragraph.
9. Save the text on both data disks.
10. Print the letter.
11. Record beginning and ending time on the printout.
12. Turn off the system.
13. Turn in the printout, word processing software and the two data disks to your teacher.

ACTIVITY D-8: MOVING A WORD, SENTENCE OR PARAGRAPH WITHING A DOCUMENT (TEACHER'S COPY)

Current date

Mrs. Rita Anderson
9524 First Avenue
Fort Worth, TX 76105

Dear Mrs. Anderson:

You are now approaching the sixth month of your health club membership. We are sure that these six months have been a healthful, invigorating time. We know that you have made excellent use of your membership as evidenced from our registration roster.

Renew your membership for another six months. During this month we are offering a 20% discount membership to all our current members. Attain a more active, healthful life by maintaining our health plan.

Innovative Health Clubs of Texas believes our members will enjoy the new olympic-size pool that will open next month.

You should consider stopping in our office the next time you come to the club to renewembership.

Sincerely,

Jake H. Irwin
Coordinator

xx

Activity Name: Moving a Sentence or Paragraph D-9
or Merging Documents
Unit Objective 11 and 12

Suggested Use of Activity

This activity is optional. The teacher may use other teacher-made or published materials to reinforce this activity.

Objectives of Activity

The student should be able to key in two separate documents and move one document into the other one with 100% accuracy within 40 minutes.

Facilities or Materials Needed

Computer
1 or 2 disk drives
1 or 2 formatted disks
Word processing software
Word processing manual
Paper (continuous-form or single sheet)
Merging Two Documents worksheet

Description of Activity

The teacher will tell students the pages of the word processing manual to read to complete this activity. The students should read the pages about moving material from one document into another and recalling a file from memory before beginning this activity. Students will use the copy in Activity D-9 and follow the instructions to move material.

Suggested Length of Activity

A 50-minute class period

Suggestions for Teacher

The teacher must be sure students have read the word processing manual on moving or merging documents. As additional practice, students could write complaint letters about phone bills from previous months. In a separate document, have students key in a list of months and amounts of long-distance charges that are in question. Then merge this list with the complaint letter.

Suggestions for Evaluation

The teacher should grade the letter as usual. Accuracy must be 100%, and the completion time must be considered in grading.

Name ____________________________

ACTIVITY D-9: MERGING TWO DOCUMENTS

DIRECTIONS: The teacher will tell you the pages of the word processing manual to read to complete this activity. Read the pages about moving material from one document into another and recalling a file from memory before beginning this activity. Use the copy below as you follow the instructions to move material.

INSTRUCTIONS:

1. Read the manual.
2. Boot the system.
3. Record the beginning time.
4. Key in the text of Document 1:

Current date

Mr. John V. Griffin
60606 First State Street
Arlington, TX 76010

Dear Mr. Griffin:

We know you have worked hard for your retirement and you wish to get your money's worth when you plan your vacations. We at First Travel have just the package vacations you desire. When you come to us, we offer the lowest prices in U.S. vacation packages.

Come in or call us to plan your next winter vacation. We have some beautiful places at the lowest prices.

Sincerely,

Kwang Kim
Manager

xx

Name________________________

ACTIVITY D-9: MERGING TWO DOCUMENTS
(Continued)

5. Save on both data disks.
6. Key in the following text of Document 2:

   The following packages per person are based on weekday travel, two-person occupancy of double-room accommodations. The package includes round-trip travel, rental car (maximum 5 days, 150 miles), double-occupancy hotel accommodations and taxes.

Las Vegas	$500
Disneyworld and Epcot	649
Disneyland	899
Disneyworld, Epcot, Busch Gardens	729
Hawaii (1 island)	829
Hawaii (3 islands)	979

7. Save on both data disks under a different name than the first text.
8. While Document 2 is on the screen, follow the procedure to move material between documents. Be sure all of the text is highlighted to be moved. Move Document 2 text.
9. Ask your teacher for the pages in the manual that instructs how to recall a document to the screen.
10. Bring Document 1, the letter, up on the screen. Use the up- or down-arrow key to move to the return preceding the last paragraph of Document 1.
11. Follow the procedure as outlined in the manual to move text.
12. Save the merged letter under a new name.
13. Print the letter.
14. Record the beginning and ending time on the printout.
15. Turn off the system.
16. Turn in the printout, word processing software and both of the data disks to your teacher.

Name______________________

ACTIVITY D-9: MERGING TWO DOCUMENTS
(TEACHER'S COPY)

Completed merge of 2 documents

Current date

Mr. John V. Griffin
60606 First State Street
Arlington, TX 76010

Dear Mr. Griffin:

We know you have worked hard for your retirement and you wish to get your money's worth when you plan your vacations. We at First Travel have just the package vacations you desire. When you come to us, we offer the lowest prices in U.S. vacation packages.

The following packages per person are based on weekday travel, two-person occupancy of double-room accommodations. The package includes round-trip travel, rental car (maximum 5 days, 150 miles), double-occupancy hotel accommodations and taxes.

Las Vegas	$500
Disneyworld and Epcot	649
Disneyland	899
Disneyworld, Epcot, Busch Gardens	729
Hawaii (1 island)	829
Hawaii (3 islands)	979

Come in or call us to plan your next winter vacation. We have some beautiful places at the lowest prices.

Sincerely,

Kwang Kim
Manager

xx

Activity Name: Formatting a Short Report D-10
Unit Objective 13

Suggested Use of Activity

The teacher must require the student to complete the activity. Students must be familiar with formatting short reports since colleges now require papers to be done with word processing. An additional report from published material may be used to reinforce this activity.

Objectives of Activity

The student should be able to format a short report with 100% accuracy within 60 minutes.

Facilities or Materials Needed

Computer
1 or 2 disk drives
1 or 2 formatted disks
Word processing software
Word processing manual
Paper (continuous-form or single sheet)
Formatting a Short Report worksheet

Description of Activity

The teacher will tell students the pages of the word processing manual to read on how to paginate text and how to change linespacing and margins within a report. Students should use the copy in Activity D-10 and follow the instructions to set line spacing and margins within a document.

Suggested Length of Activity

Approximately 60 minutes

Suggestions for Teacher

The teacher must tell students the pages to read for this activity before students begin the activity. In addition, have students read the manual on how to retrieve files from disk since this activity requires more than one class period.

Suggestions for Evaluation

The teacher should evaluate this activity as any short report would be graded. The completion time and 100% accuracy must be included in the evaluation.

Name________________________

ACTIVITY D-10: FORMATTING A SHORT REPORT

DIRECTIONS: Your teacher will tell you the pages of the word processing manual to read on how to paginate text and how to change line spacing and margins within a report. Use the copy below as you follow the instructions to set line spacing and margins within a document:

INSTRUCTIONS:

1. Read the manual.
2. Boot the system.
3. Record the beginning time.
4. Set the margins and line intervals for a report.
5. Set any tabs needed.
6. Set the text for centering.
7. Key in the following for the title page and return the number of times indicated inside the parentheses:
    PURCHASING A HOME (8)
    by Student's Name (8)
    English 101 (1)
    Date Due (1)
8. Code to end the page.
9. Key in the following text for the report:

PURCHASING A HOME

The most expensive purchase an individual makes in his or her lifetime is a home. A home is shelter plus an investment of the housing dollars. Therefore, it becomes imperative for the home buyer to shop wisely and carefully.

The first step is to save 10 to 20 percent of the down payment for the house the home buyer is planning to purchase. Banks usually allow the home buyer to purchase a home that costs two to three times the annual income. Armed with this information, the individual becomes aware of the dollar value of a home that may be purchased and consequently the amount needed for down payment.

The second step is to contact a reliable multiple-listing real estate agent. Tell the agent the price range, number of bedrooms, baths, and size of garage the buyer wants. The agent will have listing books with pictures and descriptions of the homes. From these, the buyer may select the homes to look at. Look at the home on a bright sunny day and check all the rooms, closets, baths and basement for any structural damage. Run the shower and bathroom sink hot water and then flush the toilet to

Name____________________________

ACTIVITY D-10: FORMATTING A SHORT REPORT
(Continued)

check for any water pressure and temperature changes. Then run the kitchen faucet while the shower is on and again check for water pressure and temperature changes.

Once a home is selected for purchase, the third step is to ask the present owners the age of the water heater, furnace and air conditioner. If appliances are sold with the home, inquire about the ages and past repair incidence. Next, hire a plumber, electrician and heating/air-conditioning technician to check the respective systems.

The fourth step to take when a house is selected is to place a bid with the realtor. A bid may be $5,000 to $10,000 below asking price. However, the realtor will probably know the range the seller will accept. Once the bid is accepted, the buyer must select a lending institution.

The fifth step involves research for a mortgage. Check with the various lenders--savings and loans, credit unions, commercial banks and life insurance companies--on the interest rate, length of mortgage, closing costs, and filing fees they charge. Inquire about the title search, title warranty, survey and other charges common in home purchases.

The sixth step involves the lender selection and the resulting closing. Once the buyer and seller meet at the closing to exchange papers and money, the last step is to move in.

10. Save on both data disks.
11. Print out.
12. Record the beginning and ending time on the printout.
13. Turn in the printout, word processing software and both data disks to your teacher.

Activity Name: Formatting Reports with Footers, Headers, Superscripts and Subscripts
Unit Objective 14
D-11

Suggested Use of Activity

The teacher may use the activity as time permits.

Objectives of Activity

The students should be able to key in a two-page report with footers, headers, superscripts and subscripts within 60 minutes with 100% accuracy.

Facilities or Materials Needed

Computer
1 or 2 disk drives
1 or 2 formatted disks
Word processing software
Word processing manual
Paper (continuous-form or single sheet)
Formatting Reports with Footers, Headers, Superscripts and Subscripts worksheet

Description of Activity

Teacher will tell students the pages to read in the software manual about footers, headers, superscripts and subscripts. Students should use the copy in Activity D-11 and follow the instructions to format the report.

Suggested Length of Activity

Approximately 60 minutes

Suggestions for Teacher

The teacher shall tell students the page numbers for the sections of the software manual that pertain to footers, headers, superscripts and subscripts. After students have read the information, demonstrate the procedures for this work.

The teacher may want to provide the students with disks having a prerecorded copy of the text.

Suggestions for Evaluation

The teacher should use the method for grading of unbound reports. Include 100% accuracy and completion time in the evaluation.

Name____________________________

ACTIVITY D-11: FORMATTING REPORTS WITH FOOTERS, HEADERS, SUPERSCRIPTS AND SUBSCRIPTS

DIRECTIONS: Your teacher will tell you the pages to read in the software manual about footers, headers, superscripts and subscripts. Use the copy provided as you follow these instructions to format the report.

INSTRUCTIONS:

1. Read the software manual for instructions to type footers, headers, superscripts and subscripts.
2. Record the time you begin this activity.
3. Boot the system with the word processing software.
4. Code to format an unbound report.
5. Key in the first two paragraphs and then through the second sentence of the third paragraph.
6. Type a superscript, a raised number, to footnote the quote. Refer to the manual or ask your teacher the procedure to follow for typing superscripts.
7. Complete the footnote. See the word processing manual or check with your teacher how to code for a footnote or footer at the bottom of the page upon which it is cited.
8. Complete keying paragraph 3 and key in paragraph 4.
9. In paragraph 5 type a subscript (a lowered number) in the formula.
10. Complete keying of the report.
11. Review the manual to code for a header for the second page or ask your teacher for assistance. The header will be "2" for the page number.
12. Key in the information for a "Reference" page.
13. Print the report.
14. Record the beginning and ending time on the printout.
15. Turn in the printout, word processing software and both data disks to your teacher.

Name____________________________

ACTIVITY D-11: FORMATTING REPORTS WITH FOOTERS, HEADERS, SUPERSCRIPTS AND SUBSCRIPTS

(Continued)

INVESTING

Many vehicles for investments are available. Certificates of Deposit (CD's), U.S. Savings Bonds Series EE and H, Municipal Bonds, Corporate Bonds, Preferred or Common Stock, Mutual Funds, Money Market Funds, and Employee Stock Purchase Plans are a few means of investing money.

The points to remember when investing are: safety, security and liquidity. An individual who plans to invest regularly should look for investments that will grow through the years.

Safety of the investment refers to reducing the possibility of loss. Most commercial banks are insured by the FDIC[1] for $100,000. When an investor purchases stock from a corporation, the most he could lose if the business fails is the amount invested. However, if the investor invests in corporate bonds, the law requires a bankrupt business to liquidate the assets and pay back some or all of the investment to bondholders if any funds remain.

Security of the investment means the investment dollars are used by the company in a way that will profit both the business and investor.

---

[1] D. Hayden Green. Consumers in the Economy. Cincinnati: South-Western Publishing Company, 1983, p. 259.

Name____________________________

ACTIVITY D-11: FORMATTING REPORTS WITH FOOTERS, HEADERS, SUPERSCRIPTS AND SUBSCRIPTS
(Continued)

Liquidity is not H_2O but the ease and speed by which the investor may convert the investment to cash. The best liquidity is provided by regular savings accounts followed by Money Market accounts with check-writing privileges. The other forms of investment will require 10 to 60 days to convert to cash.

The investor will study all forms of investments to determine the method that best suits the investor's needs. However, diversification will provide the investor with a better chance of earning money and avoiding losses.

Activity Name: Formatting Labels and Envelopes D-12
Unit Objectives 15 and 16

Suggested Use of Activity

The formatting of labels and envelopes is optional. The teacher may design labels and envelopes on continuous form paper to use in this unit. This unit is designed to illustrate formatting procedures required for printing labels and envelopes.

Objectives of Activity

The student should be able to prepare 10 labels or envelopes within 30 minutes with 100% accuracy.

Facilities or Materials Needed

Computer
1 or 2 disk drives
1 or 2 formatted disks
Word processing software
Word processing manual
Paper (continuous-form labels or envelopes)
Formatting Labels and Envelopes worksheet

Description of Activity

The teacher will tell students the pages of the manual to read before beginning this activity. Students should use the addresses in Activity D-12 and follow the instructions.

Suggested Length of Activity

A 50-minute class period

Suggestions for Teacher

The teacher could demonstrate needed changes in the address file to print labels or envelopes. Then demonstrate the loading of continuous-form labels or envelopes in the printer.

Suggestions for Evaluation

The teacher should use the method for grading envelopes. Include the completion time and require 100% accuracy.

Name____________________________

ACTIVITY D-12: FORMATTING LABELS AND ENVELOPES

DIRECTIONS: The teacher will tell you the pages to read in the manual before you begin this activity. Use the following addresses as you follow the instructions.

INSTRUCTIONS:

1. Read the instructions in the manual to print out mailing labels or envelopes.
2. Record beginning time.
3. Load into the computer the addresses below or key in addresses from a typing or word processing textbook.
4. If using the addresses below, make the needed changes in the margins to print out on mailing labels or envelopes. There are 5 horizontal lines on each label.
5. Save the changes in addresses below (or other keyed addresses) under Activity name on both data disks.
6. Prepare the printer by loading continuous-form labels or envelopes.
7. Print the labels or envelopes.
8. Record the ending time.
9. Turn off the system.
10. Turn in the labels or envelopes, word processing software and data disks to your teacher.

Mrs. Helen Huffy
1602 Fifth Avenue
Chicago, IL 60609

Mr. John James
One Park Place
Albuquerque, NM 87101

Mr. Robert Baker
1501 Poppins Street
San Francisco, CA 94111

Ms. Joan W. Wood
425 Big Bend Road
Los Angeles, CA 90049

Mr. and Mrs. Aaron Voss
16N304 Burlington Avenue
Burlington, IA 52601

Mr. Stephen Adams
1004 Union Street
Union, IL 60180

Mrs. Stephanie Holmes
515 1/2 Westview Road
Sycamore, IL 60178

Mr. Alan Thuestad
15 Brown Street
Rockford, IL 61106

Mr. and Mrs. Warren Warner
7895 McClure Road
Hudson, IL 61748

Miss Glenda Stevens
1404 First Street
Champaign, IL 61820

Activity Name: Using a Spelling Check D-13
Unit Objective 17

Suggested Use of Activity

This activity is optional. The teacher may use this activity to familiarize the student with spelling-dictionary software.

Objectives of Activity

Students must be able to key in, use a spelling check, and then correct the errors within 40 minutes with 100% accuracy. Students must be made aware of the limitations of a spelling check.

Facilities or Materials Needed

Computer
1 or 2 disk drives
1 or 2 formatted disks
Spelling check and dictionary software and manual
Word processing software and manual
Paper (continuous-form or single sheet)
Using a Spelling Check worksheet

Description of Activity

The teacher will show students how to load and access the spelling check and dictionary. Students should also read the corresponding material given in the manual. Students should use the copy in Activity D-3 to follow instructions to locate and correct errors.

Suggested Length of Activity

A 50-minute class period

Suggestions for Teacher

The teacher may want to provide the students with disks having a prerecorded copy of the text.

The teacher could demonstrate the spelling check with dictionary on a sample letter or short report. Another suggestion would be to have the student work with the publisher-prepared introduction (tutorial) of the spelling check.

Suggestions for Evaluation

The teacher should use the method of grading letters. Include the completion time in the evaluation. Accuracy must be 100%.

Name____________________________

ACTIVITY D-13: USING A SPELLING CHECK

DIRECTIONS: Your teacher will show you how to load and access the spelling check and dictionary. You should also read the corresponding pages in the manual. Use the copy given below as you follow the instructions to locate and correct errors.

INSTRUCTIONS:

1. Record the time you begin this activity.
2. Boot the system with the word processing software.
3. Key in the necessary codes to set up an average-length letter.
4. Save the letter on both data disks.
5. Use the up-arrow key to return to the top of the letter.
6. Follow the procedures necessary to load the spelling check and dictionary.
7. Follow the procedure to locate the errors.
8. Correct any errors highlighted by the spelling check that are incorrect.
9. Correct any errors not highlighted by the spelling check.
10. Save the letter again on both data disks.
11. Print the letter.
12. Remove the letter from the printer.
13. Record the beginning and ending time on the printout.
14. Turn off the computer, monitor and printer.
15. Turn in to your teacher the printout, word processing software and spelling check software.

Name______________________________

ACTIVITY D-13: USING A SPELLING CHECK
(Continued)

Current date

Dr. Maria Aleman
Monmouth College
Monmouth, IL 61462

Dear Dr. Aleman:

Our organization will be holding its anual stockholders' meeting on Febuary 2. We invite people from various academic and proffessional fields to speak too our stockholders.

We would be honored to have you speak at our meeting. We know your a noted economist on economics in the 1990s. Our company needs economic investment stradegy information for the individual. This information should be benefical for are investors and are company.

Please let us know by September 30 if you could arrange your busy schedule to be one of our featured guest speakers.

Sincerly,

Thomas H. Horne
Presdent

xx

UNIT E: SPREADSHEET APPLICATIONS

UNIT PLAN

Introduction

The spreadsheet application unit is a required unit in this course. The activities progress from simple orientation concepts through complex applications. A template disk containing the activities could be prepared by the teacher in advance. A spreadsheet software package at a demonstration computer or at individual workstations is required. This unit may be supplemented with ready-made exercises provided by a number of textbook publishers.

Topical Outline of Unit

SPREADSHEET APPLICATIONS

1. *Understanding a Spreadsheet
2. *Understanding Practical Uses of a Spreadsheet
3. *Understanding Basic Functions of the Spreadsheet
4. *Getting Ready to Use a Spreadsheet
5. *Using Prompts on the Spreadsheet
6 *Moving on the Spreadsheet
7. *Using Labels, Values and Formulae
8. *Using Spreadsheet Storage Commands
9. *Editing a Spreadsheet
10. *Formatting a Spreadsheet
11. *Finding Information on the Spreadsheet
12. Solving Business Problems
13. Creating Graphs
14. Printing a Spreadsheet
15. Using Advanced Functions on the Spreadsheet

Unit Objectives

The student will be able to

1. Define the visual characteristics of a spreadsheet with 100% accuracy.
2. Orally give 3 practical examples of spreadsheets used in business.
3. Define the basic functions of a spreadsheet by giving examples of each function with 100% accuracy.
4. Boot a computer with a spreadsheet software package with 100% accuracy.
5. Prepare a data disk for storage with 100% accuracy.
6. Demonstrate the following commands with 100% accuracy:
    - LOAD
    - SAVE
    - INIT (FORMAT)
    - DELETE
    - CATALOG (DIRECTORY)
7. Demonstrate vertical, horizontal and jump cursor commands with 100% accuracy.
8. Demonstrate format commands with 100% accuracy (integer, left-alignment, right-alignment, dollars and cents).
9. Delete characters, blank cells, cancel commands and edit commands with 100% accuracy.
10. Solve arithmetic problems using a spreadsheet with 100% accuracy.
11. Solve business related word problems using a spreadsheet with 100% accuracy.
12. Create graphs using a spreadsheet with 100% accuracy.
13. Print a spreadsheet or sections of a spreadsheet with 100% accuracy.
14. Insert blanks, repeat commands, fix rows and columns, view horizontal and vertical windows, and merge spreadsheet information with 100% accuracy.

SUGGESTED STUDENT ACTIVITIES

Activity Name: Understanding Spreadsheets E-1
Unit Objective 1

Suggested Use of Activity

The teacher will show students what a spreadsheet looks like and will allow students to enter data on a paper grid simulated spreadsheet.

Objectives of Activity

Students will be able to define the visual characteristics of a spreadsheet by filling in spreadsheet data with 100% accuracy.

Facilities or Materials Needed

Demonstrator computer booted with spreadsheet software OR paper simulation of spreadsheet on wall OR blackboard (use 8 1/2 x 11 paper with letters and numbers to indicate columns and rows)
Paper grid sheets that represent the columns and rows of the spreadsheet package being used
Understanding Spreadsheets worksheet

Description of Activity

This activity simulates the uses of spreadsheets by using a demonstration computer or paper grids. The teacher should explain strategy, placement and logic as this information is entered in cells that are 9 spaces. This should be completed as a group activity. Consult manual for special features of your spreadsheet software.

Suggested Length of Activity

A 50-minute class period

Name______________________________

ACTIVITY E-1: UNDERSTANDING SPREADSHEETS

DIRECTIONS:

1. Enter the following words:

A1	SPREADSHE
B1	ETS
C1	ARE
D1	TOOLS
E1	FOR
F1	BUSINESS
A3	YOU
B3	CAN
C3	CALCULATE
E3	ON
F3	SPREADSHE
G3	ETS

2. Review word placement to allow for blank spaces and long words.
3. Enter the following numbers:

A5	2
B5	+
C5	2
D5	=
A7	2
B7	-
C7	2
D7	=
A9	2
B9	*
C9	2
D9	=
A11	2
B11	/
C11	2
D11	=

4. Review signs for arithmetic and placement of numbers.
5. Enter the following formulae:

E5	A5 + C5
E7	A7 - C7
E9	A9 * C9
E11	A11 / C11

6. Review formulae data entry and the answers. Go back and change all of the 2's in column C to 3's.

Name____________________________

ACTIVITY E-1: UNDERSTANDING SPREADSHEETS
(Continued)

7. Calculate the size of a spreadsheet by multiplying the number of columns by the number of rows.
8. Create a spreadsheet on grid paper spreadsheet.
PROBLEM--ENTER THE FOLLOWING WORDS, NUMBERS AND FORMULAE:
SPREADSHEETS ALLOW BUSINESS PERSONS TO DO QUICK CALCULATIONS
SUCH AS:

```
  254 /   4 = (USE FORMULA)
19620 * 261 = (USE FORMULA)
  163 + 175 = (USE FORMULA)
  973 - 679 = (USE FORMULA)
```

Activity Name: Practical Uses of a Spreadsheet E-2
Unit Objective 2

Suggested Use of Activity

The teacher will allow students to share ideas and give examples of how businesses could use spreadsheets to make the job more efficient.

Objectives of Activity

Students will be able to create a spreadsheet to keep control of inventory in a grocery store with 100% accuracy after having practiced on three examples in class.

Facilities or Materials Needed

Paper grid spreadsheets
Demonstration computer or board simulation of spreadsheet
Data disk for spreadsheet package. Have solution to an inventory example prepared to show at the end of the period.
Practical Uses of a Spreadsheet worksheet

Description of Activity

This activity demonstrates three realistic uses of spreadsheets by creating a credit billing, a telephone billing and student grade averaging. Students will practice entering labels and values and paper guides while reviewing arithmetic logic

Suggested Length of Activity

A 50-minute class period

Suggestions for Teacher

If a student finishes the fifth activity early, assign the student to calculate the 2nd quarter inventory.

For the more advanced student, assign the student to indicate charges and payments in the first example.

Name________________________

ACTIVITY E-2: PRACTICAL USES OF A SPREADSHEET

Electronic spreadsheets can be used to make businesses function more efficiently. Businesses can keep records of customers' credit charges and payments. Businesses can keep accurate inventory records using electronic spreadsheets. Manufacturers can predict greater or lesser profits by changing percentages to answer "what if" business questions and anticipations. Teachers can use spreadsheets to keep account of student grades and averages.

DIRECTIONS:

1. Enter the following data to simulate a credit billing:

A1	CUSTOMER
A2	NAME
B2	JANUARY
C2	FEBRUARY
D2	MARCH
A5	JONES
B5	0
C5	56.71
D5	19.63
A6	BRADY
B6	0
C6	192.56
D6	137.92
A7	KLEIN
B7	360.56
C7	0
D7	392.47

2. Enter TOTAL DUE in Column E. Use formulae to calculate amount due.
3. The telephone company measures units to determine phone billings. This is done on a call-by-call basis. Using pencil and spreadsheet grid, simulate a spreadsheet for phone billing unit totals.

A1	TELEPHONE
A2	NUMBER
A3	CALLED
B2	UNITS
B3	USED

(Fill in 5 telephone numbers and 5 total units used)

B10	TOTAL
B11	UNITS
B12	(Calculate total units by entering a formulae)

Name____________________________

ACTIVITY E-2: PRACTICAL USES OF A SPREADSHEET (Continued)

4. Teachers use spreadsheets to keep account of students grades. Using a paper spreadsheet, fill in this example and enter averages for BRADY and KLEIN.

	ASSIGNMENT			
NAME	1	2	3	AVERAGE
JONES	89	92	95	(B2+C2+D2)/3
BRADY	91	95	89	
KLEIN	93	89	99	

5. Businesses use spreadsheets to control inventory. Create a spreadsheet for a grocery store. Include the following products: BREAD, MILK, SOUP, FRUIT, CRACKERS. Indicate a "piece" inventory for the 1st quarter of the year. Total the 1st quarter totals on the spreadsheet.

Activity Name: Basic Functions of the Spreadsheet E-3
Unit Objectives 3 and 10

Suggested Use of Activity

The teacher will allow students to practice, until perfect, the basic functions of operations. The teacher also needs to review expressions in formula representation with students. The teacher should supply each student with a complete listing of the functions of the software package. (Although the functions have not been formally presented to the students yet, it is easier for the students to understand the package if a guide sheet is supplied to them.)

Objectives of Activity

Students will be able to solve arithmetic problems using order of operations with 100% accuracy.

Students will be able to identify basic functions of the software package with the guidance of a function sheet(s).

Facilities or Materials Needed

Paper grid sheets
Computer demonstrator with software loaded
Prepared data disk
Quiz sheets and worksheets
Basic Spreadsheet Functions worksheet

Description of Activity

This activity reviews the basic order of operations by solving arithmetic equations. There is a practical example to provide practice and application.

The last part of the lesson introduces basic built-in functions. This will vary for each software package. It is suggested that the teacher supply each student with a complete listing of the software functions prior to the student's using the actual software. It is a handy reference guide if the student works ahead or if the student needs help while the teacher is busy with another student--consider it to be the roadmap of the software. Briefly review the commands and demonstrate some of them. It is not suggested that the student should master all of the commands at this time.

Suggested Length of Activity

A 50-minute class period

Suggestions for Teacher or for Evaluation

Advanced students could transcribe the quiz onto the spreadsheet grid sheets for extra credit.

Name______________________________

ACTIVITY E-3: BASIC SPREADSHEET FUNCTIONS

DIRECTIONS:

1. Order of Control from first to last:
   ^ Exponents
   () Parentheses
   * Multiplication or / Division (completed from left to right)
   + Addition or - Subtraction (completed from left to right)
   Work on the following problems together:
   1. (2 + 3 * 5) - 3
      (2 + 15) - 3
      17 - 3
      14
   2. (2 ^ 3 * 5) - 3
   3. (2 ^ 3 * 5) - 3 ^ 2
2. QUIZ
   Solve the problems.
   Show all of your work.
   1. 23 - 6 * 3
   2. (9 ^ 2 * 2) * 3
   3. 63 + 3 * 4
   4. 9 * (6 + 5)
   5. 16 - 3 + 2 * 7
   6. 6 + 7 - 4
   7. 18 * 4 / 3
   8. 15 / 3 * 3
   9. (56 * 7) / 2
   10. (8 ^ 3) / 4
3. Averages
   5 + 7 + 8 + 9
   What is the formula?
   6 + 9 + 12 + 14 + 13 + 11
   What is the formula?
4. Solve this business production problem to figure average pieces produced and average value per piece.

WORKER	PIECES PRODUCED	VALUE PER PIECE
JONES	12	15.54
BRADY	13	16.31
KLEIN	15	14.96
AVERAGE	?	?

Activity Name: Getting Ready to Use a Spreadsheet E-4
Unit Objectives 4 and 5

Suggested Use of Activity

The teacher will allow the students to initialize a disk for storage and to boot with a spreadsheet software package.

Objectives of Activity

The student will be able to boot a computer with a spreadsheet software package with 100% accuracy and to prepare a data disk for storage.

Facilities or Materials Needed

Computer with 1 or 2 disk drives
Spreadsheet software package
Spreadsheet manual
Disk for storage

Description of Activity:

This activity describes the procedures needed to initialize a disk in a step-by-step method.

1. Two disks are needed to work with a spreadsheet:
    program disk
    data (storage) disk
   The program disk contains the spreadsheet program (consult manual for further description of the program). The data disk is used for storage of program.
2. Describe hardware needed to use the spreadsheet software package. Include the following: monitor, CPU, disk drive(s) and printer.
3. Demonstrate the operation of each piece of hardware that will be used with the spreadsheet program.
4. Boot the spreadsheet software.
5. Insert blank disk.
6. Prepare data disk for storage (initialize or format). Use the procedure described in individual manuals for preparation of storage disks.
7. Allow students time to experiment with the package.

Suggested Length of Activity

A 50-minute class period

Activity Name: Spreadsheet Prompts, Spreadsheet Moving E-5
Unit Objective 6 and 7

Suggested Use of Activity

The teacher will allow students to examine the spreadsheet window to identify prompts. The teacher will use the prompts to instruct student to move the cursor.

Objectives of Activity

Students will be able to identify row labels, cursor coordinates, column labels, direction indicator, cursor, prompt line and edit line with 100% accuracy.

Students will be able to move the cursor on a spreadsheet using directional keys and GOTO coordinates with 100% accuracy.

Facilities or Materials Needed

Computer with 1 or 2 disk drives
Spreadsheet software
Prepared storage disks
Bell timer
A pictoral representation of spreadsheet window from software manual
Spreadsheet manual

Description of Activity

This activity shows that spreadsheet software packages include many helpful hints (prompts) for the user. By using the prompts, the user is able to make his/her job easier.

1. Boot demonstration computer and individual computers with spreadsheet software.
2. Put list of prompts on board: (consult manual for prompts used in spreadsheet package)
   row labels
   cursor coordinates
   column labels
   direction indicators
   cursor
   prompt line
   edit line
3. Identify the prompts on demonstration computer. Have the students repeat this at individual computers.
4. Distribute handout with picture of spreadsheet window without prompts taken from your software manual. Have students identify the prompts listed on the board. The

cursor moves vertically and horizontally on the screen. The user may use a GOTO to move the cursor longer distances quickly. This is also called a jump move because the cursor moves quickly from one position to another without using the directional keys.

5. Watch prompt to indicate the direction of the cursor. (Consult manual for instructions in moving the cursor on the window.)
6. Have students place cursor at A1.
   Move the cursor to the following positions:
   BK254
   Q6
   AZ163
   BA1
   Z2
7. Timed moves. (Write coordinates on the board.)
   Start at A1.
   Move to the coordinates within 1 minute.
   Z63
   AZ2
   BB135
   M201
   Q3

   Start at A1.
   Move to the coordinates within 30 seconds.
   M74
   AC136
   BA6
   A117
   BK254
8. The GOTO coordinate command makes moving the cursor quick and easy. (Consult manual for GOTO commands.) Demonstrate the GOTO command.
9. Repeat Step 7. This time use the GOTO command. Try to complete the first set within 25 seconds and the second one within 15 seconds.

Suggested Length of Activity

A 50-minute class period

Suggestions for Teacher or for Evaluation

Use spreadsheet window as quiz.

If there is time at the end of the period, use additional GOTO timings.

Activity Name: Using Labels, Values and Formulae E-6
Unit Objective 9

Suggested Use of Activity

The teacher will allow students time to decide whether a letter, number or variable will be used as a label, value or formula on the spreadsheet. The teacher will also show students how to change labels into values and values into labels.

Objectives of Activity

Student will be able to identify labels, values and formulae used to solve business problems on the spreadsheet with 100% accuracy.

Facilities or Materials Needed

Computer with 1 or 2 disk drives
Spreadsheet software package
Spreadsheet manual
Prepared data disk
Labels, Values and Formulae worksheet

Description of Activity

The students will practice entering labels, values and formulae onto the spreadsheet. This activity presents cases in which words will be treated as values and in which numbers will be treated as words. The activity concludes with a business example by having students create an income statement.

Suggested Length of Activity

A 50-minute class period

Suggestions for Teacher

For advanced students, have them list types of expenses for each quarter that a heating and cooling business might encounter.

It is necessary for the teacher to consider teaching a basic editing commands to correct typing errors.

Use business problem as quiz.

Name___________________________

ACTIVITY E-6: LABELS, VALUES AND FORMULAE

DIRECTIONS:

Spreadsheets identify data entries in three general categories. They are labels, values and formulae.

1. Labels. Labels are letter, numbers or symbols not given a number value on the spreadsheet. For example:
   Business is a word--a label
   The year 1987 is a value--a label
   The "+" sign in the expression 2 + 3 is a symbol--a label
2. Labels can be entered in different ways onto the spreadsheet.
   (Consult manual for entering labels onto the spreadsheet.)
3. Enter the following data in separate cells in Row 1. Enter all of the data as labels.
   ***THE FISCAL YEAR 19-- PRODUCED A DEFICIT OF MANY $'S.
   THIS FACT + THE RECOVERY PERIOD PROVED TO BE GOOD FOR
   SOME INDUSTRIES--BUT NOT THE AUTO INDUSTRY
4. Values. Values are given a number value on the spreadsheet, such as 678 or 34. Note that when values are entered they align at the smallest unit to the right.
   Enter the following values in Row 2: 578.9054, 5674, 12, 506 and 78.65.
5. Formulae. Formulae are relationships between or among values. (Consult manual for directions in writing formulae onto spreadsheet.) Formulae appear on the prompt line. Answers to the formulae appear on the spreadsheet.
6. Enter these expressions in Columns A, B, C and D.
   Begin at Row 5.
   567 / 98 =
   45 * 67 =
   89 + 78 =
   897.543 - 675.9 =
7. Using Column E, write formulae to solve the expressions.
8. Clear the worksheet. (Consult the manual.)

277

Name____________________________

ACTIVITY E-6: LABELS, VALUES AND FORMULAE
(Continued)

9. Enter and solve the following problem on the spreadsheet.

BEN'S HEATING AND COOLING
INCOME STATEMENT
19--

INCOME:		
1ST QUARTER	6789.45	
2ND QUARTER	5678.32	
3RD QUARTER	6754.98	
4TH QUARTER	3478.65	
TOTAL INCOME		?
EXPENSES:		
1ST QUARTER	4567.89	
2ND QUARTER	3452.67	
3RD QUARTER	5987.64	
4TH QUARTER	2567.98	
TOTAL EXPENSES		?
NET PROFIT OR LOSS		?

Activity Name: Spreadsheet and Storage Commands E-7
Unit Objective 6

Suggested Use of Activity

The teacher will allow students to practice spreadsheet commands. The teacher will also review the concepts presented in the previous lessons.

Objectives of Activity

Students will be able to demonstrate storage commands and spreadsheet commands with 100% accuracy by saving, loading and deleting a program.

Facilities or Materials Needed

Computer with 1 or 2 disk drives
Spreadsheet software
Spreadsheet manual
Prepared data disk
Spreadsheet and Storage Commands worksheet

Description of Activity

Spreadsheet software includes basic commands of the system. This activity practices the commands LOAD, SAVE and DELETE. The activity concludes with a business example of a balance sheet. Consult manual for list of spreadsheet commands.

Suggested Length of Activity

A 50-minute class period

Suggestions for Teacher

Problem for advanced students:

Load PROGRAM 2
Add 5 more company assets
Add 5 more company liabilities
Add more capital to balance
NOTE: Assets = Liabilities + Owner's Equity
Save as PROGRAM 3

Name____________________________

ACTIVITY E-7: SPREADSHEET AND STORAGE COMMANDS

DIRECTIONS:

1. Storage commands. Find the storage command within your spreadsheet manual.
   Demonstrate by using the problem below:
    - Enter data
    - A1 SPREADSHEETS
    - Save PROGRAM 1 (Consult manual for file name limitations)
    - Clear worksheet
    - Display directory (catalog)
    - Load PROGRAM 1
    - Continue to enter data
      C1 CALCULATE
      C3 33.6
      D3 /
      E3 9
      F3 =
      G3 (enter formula)
    - Save PROGRAM 1
    - Clear worksheet
2. Delete. Demonstrate how a program is deleted from the data disk.
    - Delete PROGRAM 1
    - Check directory to see if PROGRAM 1 is listed.

250

Name____________________________

ACTIVITY E-7: SPREADSHEET AND STORAGE COMMANDS
(Continued)

3. Enter data on spreadsheet. Place in an appropriate position.

MICROBUSINESSWARE
BALANCE SHEET
AS OF OCTOBER 31, 19--

ASSETS:		
BUILDING	42000	
EQUIPMENT	34000	
TOTAL ASSETS		?
LIABILITIES:		
LONG-TERM DEBTS	19000	
ACCOUNTS PAYABLE	21000	
TOTAL LIABILITIES	?	
OWNER'S EQUITY:		
P. BROWN, CAPITAL	36000	
TOTAL OWNER'S EQUITY	?	
TOTAL LIABILITIES AND OWNER'S EQUITY		?

- Save PROGRAM 2

Activity Name: Editing a Spreadsheet E-8
Unit Objective 9

Suggested Use of Activity

The teacher will allow students to practice editing commands used on the spreadsheet software package. Students will work individually. The teacher will have a handout prepared which lists and exemplifies each editing command.

Objectives of Activity

Students will be able to master the editing commands of the spreadsheet to include blanking cells, clearing worksheets, deleting cells and editing existing words and values with 100% accuracy.

Facilities or Materials Needed

Computer with 1 or 2 disk drives
Spreadsheet software
Spreadsheet software manual
Editing a Spreadsheet worksheets
Prepared data disk
PROGRAM 4 (to be loaded into each student's
computer after it has been booted.)

Description of Activity

This activity illustrates that spreadsheet software packages include editing features to make the changing and correcting of data more efficient. These usually include blanking cells, clearing the worksheet (which you have already used), deleting cells and editing data so that rekeying is not necessary. Consult manual for editing features of the package.

Suggested Length of Activity

A 50-minute class period

Suggestions for Teacher

For advanced students, the teacher could have an electric bill or telephone bill for students to key and edit.

Name______________________

ACTIVITY E-8: EDITING A SPREADSHEET

DIRECTIONS:

1. Load PROGRAM 4. Use this program to demonstrate the editing features of the spreadsheet.

ELECTRONICS UNLINITED
BUDGET
FOR THE YEAT 19--

SALES INCOME		575000
ESPENSES:		
BUILDING	76000	
UTILITIES	5600	
TRAVEL	39800	
SALARIES	156000	
TOTAL EXPENSES	277400	

2. Make the following changes in PROGRAM 4
   - Change the "N" to an "M" in UNLINITED
   - Change the "T" to an "R" in YEAT
   - Change sales income to 475000
   - Under expenses add INSURANCE 10000
   - Next to TRAVEL add /ENTERTAINMENT
   - Change the "S" to "X" in ESPENSES
   - Add a new line 3 rows below total expenses PROFIT
   - Calculate the profit
   - Save PROGRAM 4
3. Key this program. Proofread it. Edit.

TOP DIRECT ACCOUNTS

	1987	1988
TRW CARBIDE	73258	35616
TOOL FLO	57559	39599
FORD TOTAL	59106	35188
QUALITY ABRASIVES	31446	22761
VERMONT AMERICAN	22293	22752

Name___________________________

ACTIVITY E-8: EDITING A SPREADSHEET
(Continued)

HAYES TOOL	18688	17536
UNITED SAW	12994	10974
CRESCENT MFG.	0	4801
NEUBER	49604	39840
NORCHUK SUPPLY	23214	19098
RADIAC	13983	20902
TOTALS	?	?

5. Save PROGRAM 5

Activity Name: Formatting a Spreadsheet E-9
Unit Objective 8 and 9

Suggested Use of Activity

The teacher will allow the students time to practice and master the formatting features of the spreadsheet. It is intended that the formatting features include or are similar to the following commands:
integer, default/general, left justified, right justified, dollars and cents, column width, and insert (blank rows and columns).

Objectives of Activity

Students will be able to display the formatting features of integer, default/general, left justified, right justified, dollars and cents, column width, and insert in business problems with 100% accuracy.

Facilities or Materials Needed

Computer with 1 or 2 disk drives
Spreadsheet software
Spreadsheet manual
Prepared data disk
Formatting Problems worksheets

Description of Activity

This activity introduces formatting commands which are used to change the appearance of the spreadsheet. These commands are similar on different spreadsheet packages. They usually include the following functions: (consult manual for changes)

integer--representation as an integer value
default/general--default changes all of the cells
general is the appearance of the cells before any format changing
left justified--all entries appear in leftmost position
right justified--all entries appear in rightmost position
dollars and cents--two decimal places will show
column width--changes the width of the column
insert--allows you to add rows and columns

Suggested Length of Activity

A 50-minute class period

Suggestions for Evaluation

The teacher should evaluate each student on each formatting feature by asking the student to display the feature as the teacher walks around the room and visits at each workstation.

Name____________________________

ACTIVITY E-9: FORMATTING PROBLEMS

DIRECTIONS:

1. Key the following program.
   TARGETS:

AAA SAW (DIST) CHICAGO, IL	10000
SEASON SUPPLY (DIST) CHICAGO, IL	6000
LARSON TOOL & SUPPLY, ROCKFORD, IL	2400
INGERSOL, ROCKFORD, IL	15000
DYNACUT, CAROL STREAM, IL	3000
WHEELS & TOOLS, CHICAGO, IL	2000
FORM RITE TOOLS, FRANKLIN PARK, IL	4000

2. Make the following changes to the spreadsheet:
   Insert a row between each entry
   Change each dollar amount to show dollars and cents
   Save PROGRAM 6
3. Key the following program. Use the formatting commands of integer, dollars and cents, column width, insert, left justify, and right justify where appropriate.

   SUMMARY OF TARGETS:

MENLO	MDS. HGT., MI	5000
EXPRESS TOOL & DIE	ROMULUS, MI	10000
ACME CARBIDE DIE	PLYMOUTH, MI	10000
AAA SAW	CHICAGO, IL	10000
SERSON SUPPLY	CHICAGO, IL	6000
SIKORSKY	STRATFORD, CT	8000
HAMILTON STANDARD	WINDSOR LOCKS, CT	12000
JOHN BATH TOOL	WORCESTER, MA	5000
PITTSBURG ABRASIVE	OAKMONT, PA	30000
GENERAL TOOL SALES	PHILADELPHIA, PA	1000
JESSOF STEEL	PITTSBURGH, PA	15000
TOTAL FOR TARGETS		?

4. Save PROGRAM 7

Activity Name: Finding Information on the Spreadsheet E-10
Unit Objective 9

Suggested Use of Activity

The teacher will allow students to strategically place four categories of information on one spreadsheet.

Objectives of Activity

Students will be able to strategically place four categories of information on one spreadsheet using the first 30 columns and the first 63 rows with 100% accuracy.

Facilities or Materials Needed

Computer with 1 or 2 disk drives
Spreadsheet software
Spreadsheet manual
Prepared data disk
Business Problems worksheet

Description of Activity

In this activity, students will take a look at the big picture by keying and organizing a statistical spreadsheet. Encourage students to proofread every line and to periodically save the spreadsheet to avoid loss of data.

Using notebook paper, have students indicate where each of the product lines have been placed on the spreadsheet. Save to compare with the printout of each product line.

Suggested Length of Activity

A 50-minute class period

Suggestions for Evaluation

When the student finishes, compare the student's actual placement with the original notebook paper placement.

Name____________________________

ACTIVITY E-10: BUSINESS PROBLEMS

DIRECTIONS:

There are times when you need to include a large amount of information within one file name on a spreadsheet. The information needs to be categorized separately within the file. In this situation, you work for an abrasive product company, and you need to send a quote for 4 products. They need to be placed within the same file. Use vertical and horizontal spacing to display the products.

Save this program as PROGRAM 8

D4A2	D	W	X	T	MESH	CONC	COST
SC-1	6	1/4	1/16	3/8	120	100	65
SC-2	6	1/4	1/16	3/8	180	100	60
SC-4	6	1/4	1/16	3/8	320	100	70
SC-19	6	1/4	1/8	3/8	500	75	70
SC-26	6	3/16	1/16	3/8	600	100	60
D12V9	D	T	U	X	MESH	CONC	COST
SC-5	2	1/2	1/4	1/16	150	150	100
SC-6	2	1/2	1/4	1/16	180	100	48
SC-8	3	3/16	3/8	1/8	120	100	43
SC-23	2	1/8	5/8	3/8	160	100	45
D12A2	D	T	U	X	MESH	CONC	COST
SC-10	6	1	3/16	3/8	120	75	50
SC-24	2	3	1/16	3/8	100	75	75
SC-12	5	3	1/8	3/8	120	100	80
D1A1	D	W	T	H	MESH	CONC	COST
SC-23	2	1/8	3/8	1/16	150	100	37
SC-25	2	1/8	3/8	1/8	130	100	40
SC-14	3	1/16	1/8	3/8	120	100	60
SC-26	6	1/4	1/8	1/16	600	100	60
SC-21	3	3/16	1/8	3/8	180	75	70

Activity Name: Solving Business Problems E-11
Unit Objective 11

Suggested Use of Activity

The teacher will allow students to individually work on the solutions to a business problem.

Objectives of Activity

The student will be able to solve a business problem using a spreadsheet with 100% accuracy.

Facilities or Materials Needed

Computer with 1 or 2 disk drives
Spreadsheet software
Spreadsheet manual
Prepared data disk
Solving Business Problems worksheet

Description of Activity

Students will solve a bank reconciliation statement by using software. Be sure to check the length limitations of your software before beginning this activity. If students do not understand the concept of a bank reconciliation statement, this will need to be explained prior to the lesson.

The answers are:

Checks and Other Debits	4205.42
Current Balance	712.96

Suggested Length of Activity

A 50-minute class period

Suggestions for Teacher

Bring a bank reconciliation statement from your bank. Blank out the Check and Current Balance section and have students calculate the answers.

Name__________________________

ACTIVITY E-11: SOLVING BUSINESS PROBLEMS

DIRECTIONS: Using your spreadsheet software, solve the following business situation.

You are an employee of AMCORE BANK in McHenry, Illinois. Your job is to set up a bank reconciliation statement for the bank customers. Here is the information on one of your customers.

PREVIOUS BALANCE	1594.83
DEPOSITS	3329.35
CHECKS AND DEBITS	?
SERVICE CHARGE	5.80
CURRENT BALANCE	?

To calculate the current balance on a bank reconciliation form, you need to remember the formula: PREVIOUS BALANCE + DEPOSITS - CHECKS AND DEBITS - SERVICE CHARGE = CURRENT BALANCE.

Checks:

2852	26.25
2875	25.00
2900	36.00
2901	75.00
2902	150.00
2903	100.00
2904	70.25
2905	81.74
2906	15.00
2907	75.00
2908	18.72
2909	40.25
2910	31.94
2911	47.03
2912	21.31
2913	40.00
2915	60.00
2916	52.29
2917	70.52
2918	21.21
2919	6.88
2920	139.94
2921	25.00
2922	649.58
2923	11.79

Checks:

2924	28.19
2925	6.00
2926	71.10
2928	138.87
2929	38.18
2930	55.10
2931	81.33
2932	5.60
2933	10.97
2935	45.00
2936	253.62
2937	50.00
2938	38.50
2939	85.00
2940	105.87
2941	33.52
2942	10.00
2943	116.86
2944	14.34
2945	25.50
2946	1000.00
2947	36.76
2949	56.71

Save PROGRAM 9

Activity Name: Creating Graphs E-12
Unit Objective 12

Suggested Use of Activity

The teacher will allow students to make graphs using the graph format on the spreadsheet software package.

Objectives of Activity

Students will be able to create a simple business graph using the graph format on a spreadsheet software package with 100% accuracy.

Facilities or Materials Needed

Computer with 1 or 2 disk drives
Spreadsheet software
Spreadsheet manual
Prepared data disk
Creating Graphs handouts

Description of Activity

This activity is helpful in business since so many formats are graphically displayed for easy comparison and for easy reading. Consult software manual and printer capabilities prior to this activity.

Suggested Length of Activity

A 50-minute class period

Suggestions for Teacher or for Evaluation

Have the students design an original graph program.

Name____________________________

ACTIVITY E-12: CREATING GRAPHS

The graph command uses a special symbol (i.e. asterisk) to display value entries. (Consult manual for graph format display.)

DIRECTIONS:

1. Demonstrate the graph format command with this program. Key the program. Display it graphically. Save AS PROGRAM 10

NEW BUSINESS GROWTH
FOR THE YEARS 1975 TO 1985

YEAR	UNITED STATES	SOVIET UNION
1975	4.3	2.3
1976	4.2	2.4
1977	5.0	3.5
1978	5.1	4.3
1979	5.0	3.8
1980	6.7	2.0
1981	4.5	3.2
1982	3.5	1.2
1983	3.6	1.3
1984	4.3	2.4
1985	4.7	2.8

Name___________________________

ACTIVITY E-12: CREATING GRAPHS
(Continued)

DIRECTIONS:

2. **Key this program. Display it graphically. Save AS PROGRAM 11.**

AMCORE BANK
MCHENRY, ILLINOIS
FULL-SERVICE BANK

	THOUSANDS OF $ IN TYPES OF ACCOUNTS		
CUSTOMER	CHECKING	SAVINGS	MONEY MKT.
ANDERSON	.5	30	0
BENTLEY	1	25	50
CARSON	.5	67	45
DALEY	.5	76	50
ENSON	2	2	5
FREUND	3	34	30
GOODEY	.5	35	25
HUNTLEY	4	7	17

Activity Name: Printing a Spreadsheet E-13
Unit Objective 13

Suggested Use of Activity

The teacher will allow students to print spreadsheets.

Objectives of Activity

Students will be able to print a spreadsheet with 100% accuracy.

Facilities or Materials Needed

Computer with 1 or 2 disk drives
Spreadsheet software package
Spreadsheet manual
Prepared data disk
Printer(s)

Description of Activity

The printing of a spreadsheet depends on the capacity of the software package and the capacity of the printer. You need to print the solutions to Programs 9 and 10. Consult manual for printing instructions.

Suggested Length of Activity

A 50-minute class period

Suggestions for Teacher:

While students take turns printing, other students can work on Activity E-13 Business Maze Puzzle.

Name____________________________

ACTIVITY E-13: BUSINESS MAZE PUZZLE

DIRECTIONS: Answer the following equations about spreadsheets on your spreadsheet. Instead of writing the answer on this sheet, write the cursor coordinates of where the answer could be found. Save the answers under the name SOLUTIONS. Print the solutions for grading.

Cursor coordinates include a ____________________ and a row.

Spreadsheets are similar to electronic ____________________.

The name of this spreadsheet package is ____________________.

Program 2 is ____________________.

To include $ and .00, you need the ____________________ command.

Programs are stored on ____________________.

Use the command ____________________ to put an existing program on the screen.

+F4/F6 is a ____________________.

____________________ are words on the spreadsheet.

Numbers are called ____________________ on the spreadsheet.

ACTIVITY E-13: BUSINESS MAZE PUZZLE
(TEACHER'S COPY)

DIRECTIONS: Answer the following equations about spreadsheets on your spreadsheet. Instead of writing the answer on this sheet, write the cursor coordinates of where the answer could be found. Save the answers under the name SOLUTIONS. Print the solutions for grading.

Cursor coordinates include a COLUMN and a row.

Spreadsheets are similar to electronic CALCULATOR .

The name of this spreadsheet package is VARIES .

Program 2 is BALANCE SHEET .

To include $ and .00, you need the INTEGER command.

Programs are stored on DISK/DISKETTE .

Use the command LOAD to put an existing program on the screen.

+F4/F6 is a FORMULA .

LABELS/TEXT are words on the spreadsheet.

Numbers are called VALUES/FORMULAE on the spreadsheet.

Activity Name: Using Advanced Functions E-14
Unit Objective 14

Suggested Use of Activity

The teacher will allow students time to practice the functions of replicate, fix titles, split window and move on the spreadsheet.

Objectives of Activity

Students will be able to replicate a formula, fix side titles, split a window vertically, and move a column of information on a spreadsheet with 100% accuracy.

Facilities or Materials Needed

Computer with 1 or 2 disk drives
Spreadsheet software
Spreadsheet manual
Prepared data disk
Using Advanced Functions handout

Description of Activity

Review special functions handout with students and demonstrate the functions used in the activity.

Suggested Length of Activity

A 50-minute class period

Suggestions for Teacher

Print the activity if time allows.

Name____________________________

ACTIVITY E-14: USING ADVANCED FUNCTIONS

DIRECTIONS: Business persons sometimes need to look at different parts of the spreadsheet at the same time. Key this program and follow the special instructions to use the advanced function keys.

THE STOREFRONT
MONTH BY MONTH REPORT OF 19--

	JANUARY	FEBRUARY	MARCH
REVENUE:			
SALES	21000	24500	22250
LESS: RETURNS	500	880	900
NET SALES			
EXPENSES:			
ADVERTISING	900	1250	1400
ENTERTAINMENT	757	800	300
SALARY	4750	7000	4000
UTILITIES	3000	3700	2300
MISCELLANEOUS	765	600	400
TOTAL			
NET INCOME			
(fix titles to key other months)	APRIL	MAY	JUNE
	21000	24500	22500
	500	0	400
	900	1250	1200
	575	700	800
	4750	3400	3400
	3400	2300	3200
	757	900	400

Name________________________

ACTIVITY E-14: USING ADVANCED FUNCTIONS
(Continued)

JULY	AUGUST	SEPTEMBER
25000	34000	35000
600	1000	950
800	1250	1300
575	400	750
4570	5600	6200
3300	3500	3500
675	870	755

OCTOBER	NOVEMBER	DECEMBER
33000	32000	32500
500	500	0
1100	900	950
675	675	1000
4800	4900	5000
3400	3400	3500
750	800	500

DIRECTIONS:

- Add an entry to each month under expenses
  INSURANCE 800 each month
  Use Replicate
- Calculate net sales, total and net income
  Use Replicate
- Move insurance to the position after utilities
- Split the window to bring net income below sales
  List the months which had a net loss

Save AS PROGRAM 12

UNIT F: DATA BASE APPLICATIONS

UNIT PLAN

Introduction

The data base applications unit is a required unit in this course. The activities develop from simple orientation to application. A data base software package is required to use this section. A demonstration computer or individual workstation computers may be used to complete the applications. This unit may be supplemented with ready-made exercises which may be purchased from textbook publishers.

NOTE: The term "data base" may be one or two words, depending upon the source.

Topical Outline of Unit

DATA BASE APPLICATIONS

A. *Understanding a Data Base

B. *Understanding Practical Uses of a Data Base

C. *Entering Data to the Data Base

D. *Performing Basic Functions of a Data Base

E. *Displaying a Data Base

F. *Printing a Data Base

G. *Editing a Data Base

H. Merging a Data Base with Other Applications

Unit Objectives

When the data base unit is completed, students will be able to

1. Define the term data base
2. Fill in the essential terms to represent what a data base looks like on the computer screen
3. Match key terminology with definitions
4. Select a data base software applications package
5. List the hardware required to boot a data base software package

6. Name five personal uses and five business uses of a data base
7. Determine whether data is alpha or numeric
8. Make simple corrections when entering data on the data base
9. Create a data base from class schedule in class group
10. Demonstrate the correct usage of save, clear and load
11. Format a disk for storage
12. Create five original data base assignments
13. Complete a data base group assignment that stresses communication skills
14. Analyze the success of group dynamics
15. Display the data base information by using scrolling function
16. Print the information from a data base
17. Update files to check for accuracy
18. Search a file to display requested records
19. Sort files alphabetically and numerically
20. Change the order of field display in a file
21. Select and hide categories to be printed
22. Insert and erase given records from files
23. Identify an integrated use of a data base with word processing and with spreadsheets

SUGGESTED STUDENT ACTIVITIES

Activity Name: Understanding a Data Base F-1
Unit Objective 1

Suggested Use of Activity

This is an introductory activity in which the teacher will define the term data base.

Objectives of Activity

Students will be able to define the term data base in sentence format.

Facilities or Materials Needed

Demonstrator computer
Data base software package
Chalkboard
Pencil/paper for students
What to Do??? What to Do??? handout
A computer and data base software per student (if available)

Description of Activity

1. Distribute the handout called "WHAT TO DO??? WHAT TO DO???" Read the instructions aloud. Review words that are unfamiliar to the students. Give the students 5 minutes to complete the task.
2. Discuss the student answers. Write student suggestions on the chalkboard. Allow students to interact with one another.
3. Have students copy the suggestions onto the handout.
4. Introduce the term data base to students. Explain that what they had completed was the organization of a data base.
5. Formulate a definition for the term data base by asking students for suggestions. Write the suggestions on the board.
6. Give students a definition for the term data base that includes the following: an electronic program that organizes facts and figures.
7. Discuss the definition with students.
8. Boot the demonstration computer with the data base package. Have a sample program ready to show students which includes the names from the handout.
9. Quiz. In sentence format, have students define the term data base. The students may use notebook paper.

3 3

Suggested Length of Activity

Activities in this unit may be altered to fit the time guide of the course. In a 6-week presentation, each objective will sustain 50 minutes of instruction. (Some activities may be supplemented.) In a 3-week presentation, each objective will sustain 25 minutes of instruction. (Some activities may be excluded.)

Name____________________________

ACTIVITY F-1: WHAT TO DO??? WHAT TO DO???

DIRECTIONS:

Congratulations! You have been selected to manage the records of the Best Message Corporation that is located in Pretech, Illinois.

Best Message designs mailing lists for companies in telemarketing (telephone sales and customer product awareness). Within the past year, Best Message has grown substantially. Because of the rapid growth, Best Message has been unable to successfully keep its records up to date regarding customer lists.

Best Message includes customer names in all of the following computer-related industries: software, hardware, sales, consultants, repair and business products.

Your job description includes surveying the customer list to redesign its format (what it looks like).

Here is a small sample of the current list . . .

Advances Computer Services, 1 S Road, Seville, IL 67890, 123/456-7890
  Repair -- Commercial
Software Lab, 3456 Grand, Peteo, WI 65748, 348/567-3462
  Sales -- Hardware and Software
Ultracomp, 333 State Street, Chicago, IL 38492, 312/893-3467
  Sales, Service
Caly Systems, 23W123, Wardton, AZ 34298, 345/678-1000
  Consultant
Computer Maintenance, 345 Archer, Los Angeles, CA 45693, 345/233-4567
  Repair
Software and Beyond, 2500 W. Wiley Road, Cleveland, OH 47563 213/783-3289
  Business Products
Mega Force, 456 Larch Place, Hanover, MA 34892, 234/785-4392
  Sales -- Software
Thompson Computers, 234 Lake Street, Sebring, FL 48392, 412/780-3485
  Consultant

. . . there are 278,560 names in addition to these.

Name______________________________

ACTIVITY F-1: WHAT TO DO??? WHAT TO DO???
(Continued)

List some of the ways that Best Message could revise the lists to make them more effective and more efficient.

Activity Name: Computer Screen with Data Base Software Package F-2
Unit Objective 2

Suggested Use of Activity

The teacher will show the students what a data base looks like.

Objectives of Activity

When given a picture of a blank computer screen, students will be able to fill in the essential terms to represent what a data base looks like on the computer screen.

Facilities or Materials Needed

Demonstrator computer
Data base software package
Chalkboard
Pencil/paper for students
Computer Screen with Data Base Software Package handout
Computer and data base software per student

Description of Activity

1. Teacher will boot the demonstrator computer with a data base software package. Review the definition of the term data base.
2. Teacher will distribute a handout of the computer screen with appropriate positions and lines to represent the computer screen when it is booted with a data base software package.
3. Teacher will use a transparency that has the same blank computer screen as the student handout.
4. Teacher will identify a position on the computer screen; students will find the same position on the handout; teacher will fill in the blank transparency; students will fill in the blank handout. Some of the positions that need to be identified include the following: file name, label, column, contents of cell, menu commands, selected command, work area, messages, cursor and help commands.
5. Class will review the positions on the data base screen.
6. To check for understanding, the teacher will use a blank computer screen as a quiz.

Suggested Length of Activity

A 50-minute class period

3 7

Name______________________________

ACTIVITY F-2: COMPUTER SCREEN WITH DATA BASE SOFTWARE PACKAGE

Activity Name: Data Base Terminology F-3
Unit Objective 3

Suggested Use of Activity

The teacher will explain the terminology used in discussing and using a data base.

Objectives of Activity

Students will be able to match key terminology with definitions on a matching quiz.

Facilities or Materials Needed

Demonstrator computer
Data base software package
Chalkboard
Pencil/paper for students
Data Base Terminology handout
Match Terms to the Correct Definition handout
Computer and data base software per student

Description of Activity

1. Teacher will boot the demonstration computer with the data base software package and review the positions on the computer screen.
2. A handout will be prepared with the key positions. (Add to or delete from the handout included in this lesson.)
3. Identify each term. Give an example of its function. Use student participation to define the term.
4. Students will write definitions for the terms on the handout sheet.
5. Review the terms and definitions.
6. Use a matching quiz of the terms and definitions to check for understanding.

Suggested Length of Activity

A 50-minute class period

Name____________________

ACTIVITY F-3: DATA BASE TERMINOLOGY

Data____________________

Field____________________

Record____________________

File____________________

Data base____________________

Cell____________________

Menu____________________

Command____________________

Work area____________________

Message____________________

Name____________________

Cursor____________________

Entry____________________

310

Name____________________________

ACTIVITY F-3: MATCH TERMS TO THE CORRECT DEFINITION

DIRECTIONS: Match the terms to the correct definitions by writing the letter of the term on the blank line.

a. data
b. field
c. record
d. file
e. data base
f. cell
g. menu
h. command
i. work area
j. message
k. name
l. cursor
m. entry

_____ 1. "Invalid entry for this position"

_____ 2. Indicator to show position on worksheet

_____ 3. Sort, update, delete

_____ 4. A listing of the functions of the data base

_____ 5. The area set aside for a single entry

_____ 6. What the file is called

_____ 7. Contains several records

_____ 8. One item

_____ 9. A collection of several files

_____ 10. The information in one category

_____ 11. A category

_____ 12. Contains several fields

_____ 13. The blank space on the screen

ACTIVITY F-3: MATCH TERMS TO THE CORRECT DEFINITION
(TEACHER'S COPY)

DIRECTIONS: Match the terms to the correct definitions by writing the letter of the term on the blank line.

a. data
b. field
c. record
d. file
e. data base
f. cell
g. menu
h. command
i. work area
j. message
k. name
l. cursor
m. entry

J 1. "Invalid entry for this position"

L 2. Indicator to show position on worksheet

H 3. Sort, update, delete

G 4. A listing of the functions of the data base

F 5. The area set aside for a single entry

K 6. What the file is called

D 7. Contains several records

A 8. One item

E 9. A collection of several files

M 10. The information in one category

B 11. A category

C 12. Contains several fields

I 13. The blank space on the screen

Activity Name: Data Base Software Application Packages F-4
Unit Objective 4

Suggested Use of Activity

The teacher will identify the hardware and software used with a data base.

Objectives of Activity

When given a list of software package names, students will be able to select the software application package that will be used for data base instruction.

Facilities or Materials Needed

Demonstrator computer
Data base software package
Chalkboard
Pencil/paper for students
Data Base Software Application Packages handout
Computer and data base software per student

Description of Activity

The purpose of this activity is to show the students the wide variety of data base software packages that are available on the market. It is suggested that the classroom teacher contact a software dealer or a computer consultant to present this lesson.

Suggestions for speaker . . .

1. Ask the speaker to bring in several data base software packages to show and to demonstrate so that students may see likenesses and differences in the data base packages. If possible, it is strongly recommended that the software dealer also bring a different computer system to demonstrate a data base software package.
2. Ask the speaker to allow students to try working on the data base software. Involve the students in the presentation.
3. Request that the speaker address the strong and the weak points of different data base software application packages.
4. Ask the speaker to say something positive about the data base software that the students are using in class.
5. Be sure to have the speaker come in early to set up the demonstration.
6. Remind the speaker that he/she is addressing high school students, so keep the vocabulary and the presentation at their level.

7. Students should take notes during the presentation using the handout.
8. Select one student to write a thank-you note following the presentation.

Suggested Length of Activity

A 50-minute class period

Name________________________

ACTIVITY F-4: DATA BASE SOFTWARE APPLICATION PACKAGES

GUEST SPEAKER________________________

COMPANY______________________________

POSITION_____________________________

SOFTWARE	SPECIAL FEATURES

OUR DATA BASE SOFTWARE PACKAGE

____

SPECIAL FEATURES

____

____

____

Activity Name: Booting the Data Base Software Package F-5
Unit Objective 5

Suggested Use of Activity

The teacher will explain the software package that will be used in the applications of a data base.

Objectives of Activity

The student will be able to list the essential hardware pieces that are necessary to successfully boot and use a data base package.

Facilities or Materials Needed

Demonstrator Computer
Data base software package
Chalkboard
Pencil/paper for students
Booting the Data Base Software Package handout
Computer and data base software per student

Description of Activity

1. Teacher will have the steps to boot the data base software on a handout.
2. Teacher will demonstrate the boot of the data base package in order, calling out the hardware while booting.
3. Distribute the handout.
4. Select students to boot the package on the demonstrator.
5. Distribute the software.
6. Using the handout as a guide, slowly and carefully boot the computer out loud. Select students to say the steps.
7. Have the students put the handout aside. Call on students to go through the boot procedures.
8. Have students practice.
9. Answer questions to review functions of the computer hardware.
10. Demonstrate how the printer is accessed by the data base software package.
11. Give the quiz to check for understanding.

Suggested Length of Activity

A 50-minute class period

Name ______________________________

ACTIVITY F-5: BOOTING THE DATA BASE SOFTWARE PACKAGE

LIST THE EQUIPMENT NEEDED TO BOOT AND USE THE DATA BASE SOFTWARE

______________________	______________________
______________________	______________________
______________________	______________________
______________________	______________________

LIST THE STEPS TO BOOT THE DATA BASE SOFTWARE

____

____

____

____

____

____

____

____

____

____

____

ACTIVITY F-5: BOOTING THE DATA BASE SOFTWARE PACKAGE
(TEACHER'S COPY)

LIST THE EQUIPMENT NEEDED TO BOOT AND USE THE DATA BASE SOFTWARE

DISK DRIVE	PRINTER
MONITOR	
KEYBOARD	
CPU	

Answers may vary.

LIST THE STEPS TO BOOT THE DATA BASE SOFTWARE

Equipment: cpu, disk drive, monitor, keyboard, printer

STEP 1: OPEN DRIVE AND PLACE DATA BASE DISKETTE CORRECTLY IN DRIVE

STEP 2: CLOSE DRIVE DOOR AND TURN ON MONITOR AND CPU

STEP 3: CHOOSE THE FIRST MENU SELECTION

STEP 4: SET FOR 80 COLUMN DISPLAY

STEP 5: CHECK PRINTER SELECTION

STEP 6: BEGIN TO CREATE DATA BASE

Activity Name: Practical Uses of a Data Base F-6
Unit Objective 6

Suggested Use of Activity

Now that the students have a basic understanding of what a data base is and what a data base looks like, it is time for them to perceive a practical knowledge of a data base. This activity looks at the ordinary uses of a data base in business and in personal life.

Objectives of Activity

Students will be able to name 5 personal uses of a data base and 5 business uses of a data base.

Facilities or Materials Needed

Old telephone directory (distribute one page per student)
Electric bill, gas bill (photocopy each of these to use in class)
Credit card bill (one copy of each bill per student)
Data base software program
Storage disk with sample program for telephone directory, electric bill, gas bill, credit card bill and class schedule
Chalkboard
Data Bases in Use handout

Description of Activity

1. Distribute page from a telephone directory.
2. Review the vocabulary and identify the entries that would be made onto a data base.
3. On the demonstrator computer, display the prepared program. Ask for a student volunteer to boot the software program. The teacher will proceed with the load and display.
4. Have student volunteer enter new data to the telephone directory.
5. Discuss the use of a data base for personal use. Make a list of data base for personal use on the chalkboard. Have students copy onto handout.
6. Pass out the photocopies of the billings. Display sample programs. Have student participants enter data.
7. Discuss the use of a data base for business use. Make a list of data base for business use on the chalkboard. Have students copy onto handout.
8. Give quiz to check for understanding.

Suggested Length of Activity

A 50-minute class period

Name____________________________

ACTIVITY F-6: DATA BASES IN USE

LIST FIVE PERSONAL USES OF A DATA BASE

____

____

____

____

____

LIST FIVE BUSINESS USES OF A DATA BASE

____

____

____

____

____

Activity Name: Entering Data to the Data Base F-7
Unit Objectives 7 and 8

Suggested Use of Activity

The teacher will review some of the rules and highlight some of the considerations to make before deciding how material is to be entered into the data base (for example, should names be entered last name first).

Objectives of Activity

When given a data base to be created, students will be able to determine whether the data are alpha or numerical, and students will determine the format by which the data will be entered.

Students will be able to make simple corrections to data that are entered on the data base.

Facilities or Material Needed

Demonstrator computer
Data base software package
Data disk for storage
Chalkboard
Pet Control handout
Pencil/paper for students
Prepared data base file for demonstration

Description of Activity

Consideration of the information that the data base will provide is important prior to creating a data base. The creator of the data base must look at the categories of information that will be needed and the way in which the categories will be used.

1. Give the definition of alpha and numeric data. Alpha uses a label as a name; numeric uses a value as a name.
2. Distribute the Pet Control handout.
3. Read the Pet Control handout aloud with students. Give students 5 minutes to answer questions on the handout.
4. Determine whether the categories should be alpha or numeric.
5. Have students fill in appropriate material for the blanks.
6. Discuss ways in which data were filled in. Look at the similarities and the differences.
7. Demonstrate on the screen some suggestions of the students. Also demonstrate the basic editing features of the software essential to entering data onto the package (such as arrows to backspace and correct errors or a command to jump to a preceding line to make corrections). (This will differ for different software packages.)

8. Boot the computer with the data base software and load this sample program on the screen. Have student add data to the program. Allow students to critique one another as an informal evaluation.

Suggested Length of Activity

A 50-minute class period

Name ____________________

ACTIVITY F-7: PET CONTROL

Terry Wilson owns a pet shop. Terry has just purchased a new computer system to organize the data for Pet Control. Terry would like to organize the animals in Pet Control so that the supervisors would have readily available the following information:

Age of the animal
Type of the animal
How long the animal has been in Pet Control
Blood type of the animal
Breed of the animal (if it applies)
Pet name for the animal

How would you limit the data for each of the Pet Control requests?

Age ____________________

Type ____________________

Time in Pet Control ____________________

Blood type ____________________

Breed ____________________

Pet Name ____________________

Activity Name: Basic Functions of a Data Base F-8
Unit Objective 9

Suggested Use of Activity

The teacher will work with students in a group to create a data base from class schedules.

Objectives of Activity

The student will be able to create a data base from his/her class schedule as a group activity.

Facilities or Materials Needed

Prior to class, advise students to bring in class schedule
Creating a File handout
Data Base Commands handout
Demonstration computer and data base software package
Individual computer and data base software package per student
Storage disk for each student
Chalkboard

Description of Activity

When creating a data base, you need to review the material that needs to be included in the data base. Material that is common or necessary to make a managerial decision is considered to be important material.

1. Give the class 5 minutes to look over class schedules and make a list of material that would be common or important in a class schedule. Use Creating a File handout.
2. Boot computer with data base software package.
3. Distribute the Data Base Command handout for students to take notes.
4. Go through the procedures for creating a new file. (Differ per package.)
5. Have students make suggestions for categories of information for the class schedule. Write suggestions on the chalkboard.
6. Choose 6 of the most common categories for the sample data base.
7. Indicate the size and type of each field.
8. Enter the data into the fields.
9. Have students change schedule with the person next to them. Enter that schedule.
10. Have students continue to swap schedules to check for understanding. Walk around the room to check computer screens.

11. Go through the procedures of turning off the equipment.
12. The Data Base Commands handout will be used in later activities.

Suggested Length of Activity

A 50-minute class period

Name ____________________

ACTIVITY F-8: CREATING A FILE

LOOK FOR COMMON ITEMS AND LIST BELOW
LOOK FOR NECESSARY ITEMS AND LIST BELOW

WHAT TYPE OF DATA

____ ALPHA NUMERIC
____ ALPHA NUMERIC
____ ALPHA NUMERIC
____ ALPHA NUMERIC
____ ALPHA NUMERIC
____ ALPHA NUMERIC
____ ALPHA NUMERIC
____ ALPHA NUMERIC
____ ALPHA NUMERIC
____ ALPHA NUMERIC
____ ALPHA NUMERIC
____ ALPHA NUMERIC
____ ALPHA NUMERIC
____ ALPHA NUMERIC
____ ALPHA NUMERIC
____ ALPHA NUMERIC

CONSIDER THE MAXIMUM SIZE FOR EACH CATEGORY AND LIST IT IN ( ) AFTER THE CATEGORY.

Name____________________

ACTIVITY F-8: DATA BASE COMMANDS

COMMAND	FUNCTION

Activity Name: Save, Clear and Load for Data Base F-9
Unit Objectives 10 and 11

Suggested Use of Activity

The teacher will demonstrate how to format a disk and how to Save, Clear and Load. The students and teacher will work together on this assignment.

Objectives of Activity

After having formatted a disk for storage, students will be able to demonstrate the correct use of the commands Save, Clear and Load.

Facilities or Materials Needed

Data Base Commands handout (Activity F-8)
Demonstration computer and data base software package
Individual computer and data base software package per student
Storage disk for each student
Chalkboard

Description of Activity

Use the directions that are special to your software package for this section.

1. Distribute data base booter disks.
2. Have students boot computers.
3. Distribute a storage disk.
4. Find instruction for formatting a storage disk. Remember to write the new commands on your command sheet.
5. Format a storage disk.
6. Use your notes to enter the class schedule data base assignment. Review the steps to create a file. Swap schedules with at least two other classmates.
7. Go through the commands to Save. Use the file name "class schedule." Stress the importance of using practical file names. Write command on command sheet.
8. Go through the commands to Clear work area. Write command on command sheet.
9. Go through the commands to Load file called "class schedule."
10. Have students practice save, clear and load while the teacher walks around the room to check for understanding.

Suggested Length of Activity

A 50-minute class period

Activity Name: Data Base Assignments F-10
Unit Objective 12

Suggested Use of Activity

The teacher will allow students to create 5 original data base files using specific directions

Objectives of Activity

Given a set of instructions, students will be able to create 5 data base assignments.

Facilities or Materials Needed

Data Base Commands handout (Activity F-8)
Data Base Assignments handout
Demonstration computer and data base software package
Individual computer and data base software package per student
Storage disk for each student
Chalkboard

Description of Activity

1. Distribute data base software package and storage disks.
2. Give students time to boot computer and load storage diskette.
3. Distribute the assignment sheet.
4. Read through the assignments together.
5. Use supplemental workbook material for the advanced students if they finish early.
6. Save the data for later activities.

Suggested Length of Activity

Two 50-minute class periods

Name__________________________

ACTIVITY F-10: DATA BASE ASSIGNMENTS

ASSIGNMENT 1
FILE NAME: ZOO KEEPER

Create a data base that lists the following about 15 animals in the zoo:
List the type of animal; the age of the animal; the number of limbs that the animal has; the color of the animal; whether the animal lives on land or on sea; and whether the animal is a meat-eater or a plant-eater.

ASSIGNMENT 2
FILE NAME: CHECKING ACCOUNT

Create a data base that lists the following for 12 accounts:
List name of the account holder; address (include the city, state, zip code); telephone number; beginning balance; amount of checks processed during the period; deposits made during the period; and ending balance.

ASSIGNMENT 3
FILE NAME: AUTO SALES

Create a data base that lists the following for 15 auto sales:
List model of car; make of car; year of the car; price of the car; amount of the down payment; and amount financed.

ASSIGNMENT 4
FILE NAME: CUSTOMER LIST

Create a data base that lists the following for 10 customers:
List customer name, address (include street, city, state, zip); account number; credit limit; beginning balance, purchases; and ending balance.

ASSIGNMENT 5
FILE NAME: PHONE BOOK

Create a data base for personal use that includes information regarding 10 of your friends or acquaintances.

Activity Name: Group Project F-11
Unit Objective 13

Suggested Use of Activity

The teacher will have students work on a group project to emphasize the need for good communication and understanding.

Students will review all of the previously learned skills in the data base unit.

Objectives of Activity

In an assigned small group, students will be able to successfully complete an assignment stressing the importance of good communication and understanding.

Facilities or Materials Needed

Group Project handout
Demonstration computer and data base software package
Individual computer and data base software package per student
Storage disk for each student

Description of Activity

1. Divide the class into groups of three.
2. Read group project assignment sheet aloud. Go through the three questions which will be evaluated at the end of the project.
3. Answer any questions as they come up. Be careful not to do the work for students.

Suggested Length of Activity

Two 50-minute class periods

Name____________________________

ACTIVITY F-11: GROUP PROJECT

You are a group of data base consultants who have the following assignment:

Home Heating supplies customers with heating fuel in the town of Computerville, Illinois. Home Heating has 3 fuel trucks and 3 drivers.

Home Heating services a customer base of 50 regular customers. Some of the customers fuel up monthly; some fuel up every other month; and others call in for fuel.

Home Heating is divided into three regions in Computerville.

The drivers need to keep a record of the number of gallons of fuel delivered so that the accountant can send a billing to the customer.

The amount of the fuel per gallon varies with the market price. So this needs to be entered as the fuel is delivered.

At the present time, Home Heating is using customer file folders to keep records. Create an electronic data base to help Home Heating refine its system.

Include the information that is indicated above. You may also include any original information that would be related to this problem.

Save the file on your group storage disk. Decide on the file name.

Activity Name: Group Project Questions F-12
Unit Objective 14

Suggested Use of Activity

The teacher will have students evaluate the success of the group by answering prepared questions that should be presented in a group environment.

Objectives of Activity

Students will analyze the success of the small groups by discussing three questions aloud.

Facilities or Materials Needed

Group Project Questions handout
Demonstration computer and data base software package
Individual computer and data base software package per student
Storage disk for each student

Description of Activity

1. Discuss the results of the group project by answering the three questions from the handout.
2. Limit the time so that all of the groups have an opportunity to participate.

Suggested Length of Activity

One or two 50-minute class periods

Name____________________________

ACTIVITY F-12: GROUP PROJECT QUESTIONS

DIRECTIONS:

Decide on your presentation format. Each person must answer one of the questions.

****

1. What is the name of your file and how did your group decide on the file name?

Boot your project before your group answers the following question:

2. What are the fields that your group selected to use in this project? Show a sample of the fields for your project.

3. Who played the following roles in your group?

   Lead consultant____

   Primary Data Entry Person__________________________________

   Data Originator____

Activity Name: Displaying a Data Base F-13
Unit Objective 15

Suggested Use of Activity

The teacher will use the data base programs that were created in the previous lesson to demonstrate the functions of scroll forward, backward and automatically.

Objectives of Activity

Students will access the display command and demonstrate the functions of scrolling forward, backward and automatically.

Facilities or Materials Needed

Data base software per workstation
Storage disk from Activity F-10
Data Base Commands handout (Activity F-8)
Chalkboard

Description of Activity

After a review of the command sheet for Save, Load and Clear, have students boot the computer with data base software. Use the demonstration computer as students use individual computers. (Read your manual prior to this lesson to identify the display functions for your software package.)

1. Demonstrate the access of the display command. Have students access the display command.
2. Add this command to command sheet.
3. List the scrolling functions of your software package on the chalkboard.
4. Have students add the scrolling functions to the command sheet.
5. Give students the following directions:
   Your assignment is to load each of the programs that is listed on the chalkboard onto your computer screen. When the program is loaded, you will scroll the program from the beginning to the end, from the end to the beginning, and automatically. I will be walking around the room and requesting a demonstration of the scrolling display to check for understanding. (On the board list the programs from previous lessons: Class Schedule, Zoo Keeper, Checking Account, Auto Sales, Customer List, Phone Book and Home Heating. (Some Home Heating names will vary.)

Suggested Length of Activity

A 50-minute class period

Activity Name: Printing a Data Base F-14
Unit Objective 16

Suggested Use of Activity

The teacher will access the print function and demonstrate the steps that are needed to print the data base programs that were generated in previous lessons.

Objectives of Activity

Student will be able to print the following files: Class Schedule, Zoo Keeper, Checking Account, Auto Sales, Customer List and Phone Book. Each of the previously assigned groups will print one copy of Home Heating.

Facilities or Materials Needed

Data base software per workstation
Storage disk from Activity F-10
Data Base Commands handout (Activity F-8)
Computer printers
Red ink pen

Description of Activity

Prior to lesson, review the steps for printing.

1. Boot demonstration computer with software. Load one of the sample programs. Explain the steps to print a program. Demonstrate the steps and print a program.
2. Have students add the steps for printing to command sheet.
3. Divide students into work groups per printer.
4. Instruct students to print the programs that are on the disk. The list may be put on the board to include the programs listed in the objective.
5. Have students proofread printed material and circle spelling corrections and data mismatches in red ink.
6. Make sure that students put name on the programs. Collect the programs to check for understanding.

Suggested Length of Activity

A 50-minute class period (may vary because of printer availability)

Activity Name: Editing a Data Base F-15
Unit Objective 17

Suggested Use of Activity

The teacher will use new and previous material to demonstrate functions that are critical to editing a data base. This section may vary in vocabulary and should be amended by the teacher.

Have a ready-made exercise available for the advanced student who may finish early.

Objectives of Activity

Students will update files to check for typographical errors and misinformation.

Facilities or Materials Needed

Data base software per workstation
Storage disk from Activity F-10
Programs for printing lesson
Data Base Commands handout (Activity F-8)
Demonstration computer

Description of Activity

1. Load the demonstration computer with data base package.
2. Load a sample program that contains a typo and that has missing information.
3. Introduce the vocabulary word "update." Update means to change.
4. Identify an inappropriate entry on the sample program.
5. Demonstrate the steps necessary to update a file. Emphasize the importance of "resaving" an updated program.
6. Have students enter the update steps on Data Base Commands handout.
7. Distribute the programs that were printed and proofread in printing lesson.
8. Instruct students to do the following to each program:
    - Load program
    - Make all necessary changes in the program
    - Resave program using the same name
    - Print a copy of each program
    - Hand in each completed program

Suggested Length of Activity

A 50-minute class period

Activity Name: What Are You Looking For? F-16
Unit Objective 18

Suggested Use of Activity

The teacher will use new and previous material to demonstrate functions that are critical to searching a data base. This section may vary in vocabulary and should be amended by the teacher.

Have a ready-made exercise available for the advanced student who may finish early.

Objectives of Activity

Students will search a file to display requested records.

Facilities or Materials Needed

Data base software per workstation
Storage disk from Activity F-10
Data Base Commands handout (Activity F-8)
What Are You Looking For? handout
Demonstration computer
Computer and data base software per student

Description of Activity

1. Distribute "What are you looking for?" handout
2. Have students create a data base file that contains the appropriate data. Note that some of the material is identical because items have identical descriptions and model numbers in inventory records.
3. Demonstrate the "search" command in the data base package.
4. Two of the manufacturers have changed model numbers for toys in your store. You will be able to identify the manufacturers after doing a search of the file. Here are the requirements of the manufacturers: Change all models AAW234 to AW432 and all models B2 to B27. Thanks for your cooperation.
5. Save the file. Use the file name Toys.
6. Print a copy of the file.

Suggested Length of Activity

A 50-minute class period

Name____________________________

ACTIVITY F-16: WHAT ARE YOU LOOKING FOR?

You have been hired to work at a toy store during the Christmas season. The toy store has its inventory entered in a data base system. Your job is to keep the inventory up to date so that the clerks can access model numbers to check for availability of merchandise.

The toys are entered in the system by type, manufacturer, model number, price, aisle code and shelf number.

Your job is to create a data base file for the following toys.

After you have created a data base file, wait for your teacher to give you further instructions on searching and changing your file to meet new needs of the toy store.

Toys:

MUSICAL BIRD, HASBRO, B2, 17.95, H12, 4
SWING SET, LITTLE TIKE ZY5768, 169.95, FRONT
TRUCK, TONKA, AAW234, 24.95, AB3, 2
DOLL, MATTEL, A98, 23.95, C9, 1
DIAPER BAG, BABCO, OP89, 15.95, A3, 2
MUSICAL BIRD, HASBRO, B2, 17.95, H12, 4
TRUCK, TONKA, AAW234, 24.95, AB3, 2
CHAIR SET, LITLE TIKE, 59.95, CENTER, TOP
TRUCK, TONKA, AAW234, 39.95, AB3, 2
DOLL, MATTEL, A98, 23.95, C9, 1

DO YOU HAVE 10 ENTRIES? YES NO PLEASE CIRCLE ONE

DID YOU HAVE TIME TO PROOFREAD? YES NO PLEASE CIRCLE ONE

Activity Name: Sorting Files F-17
Unit Objective 19

Suggested Use of Activity

The teacher will use new and previous material to demonstrate functions that are needed to sort alphabetically and numerically.

Objectives of Activity

Students will sort the files alphabetically and numerically.

Facilities or Materials Needed

Data base software per workstation
Storage disk from Activity F-10
Data Base Commands handout (Activity F-8)
Sorting Files handout
Demonstration computer
Computer and data base software per student

Description of Activity

1. Load the data base program and a sample file.
2. Explain the vocabulary word "sort." Sort means to put in a specific order for use. You may sort a file alphabetically or numerically. (Check software package to cover other sort options.)
3. Sort a sample file alphabetically and numerically.
4. Boot the computer. Have students load Zoo Keeper.
5. Go through the steps together for an alphabetic sort.
6. Add the sort steps to Data Base Commands handout.
7. Save the Zoo Keeper file. Emphasize the importance of this step.
8. Distribute the Sorting Files handout and read the instructions aloud.
9. Collect the printed copies at the end of the period.

Suggested Length of Time

A 50-minute class period

Name___________________________

ACTIVITY F-17: SORTING FILES

****

REMEMBER TO SAVE EACH FILE AFTER IT HAS BEEN SORTED

****

Sort the following files --

Checking account to display the greatest ending balance first and the smallest ending balance last.

Auto Sales to display the cars by year. The oldest car at the beginning of the file and the newest car at the end of the file.

Customer List to display the customers in alphabetical order. (Did you remember to enter last name first?)

PRINT A COPY OF THE FOLLOWING FILES. REMEMBER TO PUT YOUR NAME ON THE FILE.

ZOO KEEPER
CHECKING ACCOUNT
AUTO SALES
CUSTOMER LIST
PHONE BOOK

Activity Name: Prospect List in Order F-18
Unit Objective 20

Suggested Use of Activity

This activity reviews the commands that were previously taught in the data base unit and explains the concept of order for business usage.

Objectives of Activity

Students will change the order of field display in a file.

Facilities or Materials Needed

Data base software and computer per student
Storage disk from Activity F-10
Data Base Commands handout (Activity F-8)
Prospect List handout
Demonstration computer

Description of Activity

1. Boot the demonstrator with data base.
2. Load the Customer List file.
3. Explain to students that sometimes it is necessary to change the order of fields to fit specific needs of businesses. In the Customer List file the order of the fields is to be changed so that the order of the fields is the following:
    Account Number
    Name
    Address
    Credit Limit
    Ending Balance
    Beginning Balance
    Purchases
4. Demonstrate the steps necessary to change the field order of the file.
5. Add the commands to the Data Base Commands handout.
6. Boot computers. Have students load the Phone Book file.
7. Discuss the different ways that field could be arranged to make the Phone Book file applicable for other purposes. Answers will vary because this was an originally designed file.
8. Clear the Phone Book file.
9. Use the file Class Schedule to check for understanding of the objective by having students change the order of the fields.

10. Students will need to hand in a copy of the program in its original format, which was previously passed back, and a copy of the newly designed format.
11. Distribute Prospect List handout. Read directions aloud.
12. Give students 15 minutes to create and key a data base. Save as Prospect List.

Suggested Length of Activity

A 50-minute class period

Name____________________________

ACTIVITY F-18: PROSPECT LIST

DIRECTIONS: This list contains the name, address, city, state, zip and telephone number of prospective customers in the woodworking industry.

Create a data base file called Prospect List for the following:

Reliable Small Engine
221 W Wayne
Butler, PA 16001
412 285 6795

Outdoor Equipment Co Inc.
4209 Oleander Dr
Wilmington, NC 28403
919 799 2703

Nichols Equipment Inc.
10237 Beach Blvd.
Jacksonville, FL 33216
904 641 2924

Eagle Rental Inc.
280 By Pass
Alexander City, AL 35010
205 329 8944

Ronnie's Repair Shop
9605 San Jose Blvd.
Mandarin, FL 32217
904 268 0344

Gadsden Scaffold Company
302 N. 3 Rd.
Gadsden, AL 35901
205 547 6917

Hwy 210 Small Engines
Rt 1 Box 29-A
Currie, NC 28435
919 669 2753

Charles Reiber
Lkwd-Neshannock Falls Rd.
New Castle, PA 16101
412 659 7994

Big Bend Rental Center
327 W. Brevard
Tallahassee, FL 32301
904 772 7756

***** SORT ALPHABETICALLY BEFORE SAVING

Activity Name: What Are You Looking For? F-19
Unit Objective 21 and 22

Suggested Use of Activity

This activity practices selecting and hiding material in a data base and introduces inserting and erasing commands.

Objectives of Activity

Students will select and hide categories and insert and erase records.

Facilities or Materials Needed

Data base software and computer per student
Storage disk from Activity F-10 and F-18
Data Base Commands handout (Activity F-8)
Revised Prospect List handout
Demonstration computer

Description of Activity

1. Explain the terms "select and hide." Select names that you will choose to have specific fields displayed. Hide means that the field key words will not be displayed.
2. Boot the demonstration computer with a data base software package and the Customer List file. Have students boot.
3. Demonstrate the commands to choose the fields of name and address to be displayed. Have students add to Data Base Commands handout.
4. Demonstrate the commands to hide the field names when displayed. Have students add to Data Base Commands handout.
5. Save under a revised name. Explain why it is important to change the name of this file.
6. Look at the results. Have students think of reasons why they may choose this format. (Mailing labels should be one of the conclusions.)
7. Instruct students to create mailing labels for the following files:
    - Checking Account
    - Customer List
    - Phone Book

    DO NOT SAVE UNDER THE SAME NAME BECAUSE
    YOU WILL DESTROY OTHER INFORMATION!!!!!!!!!!!!

8. Print a copy of the mailing labels and hand in.

9. OPTION: Have available actual mailing labels and have students print the names and addresses onto the actual labels.
10. Explain the terms "insert" and "delete or erase." Insert means to add data between two existing data items. Delete or erase means to exclude data.
11. Have students boot the computers. Through oral directions, have them locate the insert and erase commands. Add these commands to Data Base Commands handout.
12. Load Prospect List file.
13. Distribute Revised Prospect List handout with insertions and deletions.
14. Have students print a copy and hand it in.

Suggested Length of Activity

Two 50-minute class periods

Name____________________________

ACTIVITY F-19: REVISED PROSPECT LIST

Insert the following record between Reliable and Ronnie's:

Rider Supply
105 Agate Way
Sharon, PA 16146
412 981 0785

Erase the Hwy 210 record.

Insert the following record in the appropriate position:

A & B Southern Supply
1879 Ruffner Rd
Birmingham, AL 35203
205 870 5297

Save the file under the same name.

Print a list that could be used for mailing labels.

Hand in printout.

Activity Name: Merging a Data Base with Other Applications F-20
Unit Objective 23

Suggested Use of Activity

This is an opportunity for the teacher to demonstrate the use of a data base with word processing and spreadsheets.

If the teacher does not have integrated software available, it is suggested that one class period be devoted to a discussion of how data base material can be merged with word processing and spreadsheets.

Objectives of Activity

Students will identify an integrated use of a data base with word processing and spreadsheets.

Facilities or Materials Needed

Integrated software (optional)
Sample business letter (copies per student)
Sample billing (copies per student)

Description of Activity

With integrated software:

1. Using the Customer List file, demonstrate how a form letter can be personalized to each customer by merging the data base with word processing. This may be done on the demonstration computer or at individual workstations, depending on student skills.
2. Using the Checking Account file, demonstrate how a blank statement can be generated by merging the functions of the spreadsheet with the data base. Include updated deposits or checks drawn in this demonstration. This may be done on the demonstration computer or at individual workstations, depending on student skills.

Without integrated software:

1. Distribute the business letter. Point out that this letter can be sent to every person on the Customer List by merging the functions of data base and word processing.
2. Distribute the spreadsheet. Point out that this billing could be calculated most accurately by merging the functions of a data base and spreadsheet. Discuss this with students to emphasize the efficiency in the office.

3. Explain the terms "insert" and "delete or erase." Insert means to add data between two existing data items. Delete or erase means to exclude data.
4. Have students boot the computers. Through oral directions, have them locate the insert and erase commands. Add these commands to command sheet.
5. Distribute the Prospect List handout. Read the directions aloud.
6. Give the students 15 minutes to create and key a data base.
7. Distribute the Revised Prosepect List handout with the insertions and deletions.
8. Have students print a copy and hand it in.

Suggested Length of Activity

A 50-minute class period

UNIT G: INTEGRATED APPLICATIONS

UNIT PLAN

Introduction

The following activities are designed to reinforce earlier learning and show the student the versatility of application software. Students will prepare a letter and merge it with the names and addresses prepared in the Word Processing Unit and merge this completed document with a spreadsheet prepared in the Spreadsheet Unit. These activities will be of greatest value when the teacher is using integrated software. If the teacher is using separate software for each application, students will need to rekey the names and addresses as well as the spreadsheet.

Topical Outline of Unit

INTEGRATED APPLICATIONS

1. *Integrating Word Processing and Data Base

2. *Integrating Word Processing and Spreadsheets

3. *Integrating Word Processing, Data Base and Spreadsheets

Unit Objectives

When the integrated applications unit is completed, students will be able to do

1. Prepare a letter with Word Processing software and save it for future activities.
2. Retrieve an address file from a Word Processing activity or rekey the address file with Data Base software and save it for future activities.
3. Save and print out form letters by merging the letter and address file.
4. Merge the spreadsheet from a Spreadsheet activity or rekey the spreadsheet with Spreadsheet software with the letter, save it and print it out.
5. Merge the merged letter and spreadsheet with the address file from the Word Processing activity or the rekeyed saved address file.

SUGGESTED STUDENT ACTIVITIES

Activity Name: Integrating Word Processing and Data Base G-1
Unit Objective 1

Suggested Use of Activity

This activity is intended to apply the word processing and data base applications previously learned. The student will key in a letter using word processing software and merge it with a data base address file prepared in the Word Processing Unit. If integrated software is not used, students must rekey the address file. This activity must be completed before doing Activity G-2.

Objectives of Activity

The student will be able to merge a word processing document with data base to create a form letter which will be saved for completion of Activity G-2 in this unit.

Facilities or Materials Needed

Computer with monitor
1 or 2 disk drives
Word processing software
Data base software or integrated software
Integrating Word Processing and Data Base worksheet (which includes Address Formatting Activity D-12)
Printer

Description of Activity

Students will format and key in a letter to a stockholder using word processing software. Students should proof, edit and save as Document A. They should then print one copy of the letter. Students should then key in the list of addresses from Activity D-12.

Suggested Length of Activity

A 50-minute class period (or two 50-minute class periods if students must rekey the data)

Suggestions for Teacher

The students may use the "Address File" and merge with the letter in Activity D-14. The teacher may use published material to reinforce this activity.

Suggestions for Evaluation

This activity may be graded if the teacher feels the students have shown proficiency in other units. However, additional activities from published materials could be used for grading. Grade this activity as you would other production work.

Name____________________________

ACTIVITY G-1: INTEGRATING WORD PROCESSING AND DATA BASE

DIRECTIONS:
1. Format and key in the stockholder letter using provided word processing software.
2. Proof and edit.
3. Save as "Document A."
4. Print one copy of the letter.

Current Date

Dear Stockholder:

Our company has done well this quarter. Earnings are up, and the declared dividend is an 8% increase over last quarter's dividend.

As an informed investor, our company knows you want to be informed about the financial status of the companies in which you invest. Therefore, we are including this past quarter's Profit/Loss Statement (Income Statement).

If you have any questions or concerns, call our company treasurer's office at our corporate offices between 8 a.m. and 5 p.m. EST. Our number is 123-567-8901.

Sincerely,

L. Thomas King
President

xx

Enclosure

Name____________________________

ACTIVITY G-1: INTEGRATING WORD PROCESSING AND DATA BASE
(Continued)

DIRECTIONS:
1. Key in the following addresses which were listed in Activity D-12 on a data base or retrieve from the word processing into the data base.
2. Save as "Address File."
3. Print one copy of data base.
4. Merge "Document A" with "Address File."
5. Save as "Stockholder Letter."
6. Print one copy of "Stockholder Letter" for each data base entry.
7. Hand in to your teacher the printouts of "Document A," "Address File" and "Stockholder Letters" along with the data disks.

Mr. Stephen Adams
1004 Union Street
Union, IL 60180

Mr. Robert Baker
1501 Poppins Street
San Francisco, CA 94111

Mrs. Stephanie Holmes
515 1/2 Westview Road
Sycamore, IL 60178

Ms. Joan W. Wood
425 Big Bend Road
Los Angeles, CA 90049

Mr. John James
One Park Place
Albuquerque, NM 87101

Miss Glenda Stevens
1404 First Street
Champaign, IL 61820

Mrs. Helen Huffy
1602 Fifth Avenue
Chicago, IL 60609

Mr. and Mrs. Aaron Voss
16N304 Burlington Avenue
Burlington, IA 52601

Mr. Alan Thuestad
15 Brown Street
Rockford, IL 61106

Mr. and Mrs. Warren Warner
7895 McClure Road
Hudson, IL 61748

Activity Name: Integrating Word Processing
and Spreadsheets
Unit Objective 2

G-2

Suggested Use of Activity

This activity will reinforce the learning from the previous units and Activity G-1. This activity will need to be completed in order to do Activity G-3.

Objectives of Activity

Students will be able to merge a word processing document with a spreadsheet to create a form letter.

Facilities or Materials Needed

Computer with monitor
1 or 2 disk drives
Word processing software
Spreadsheet software or integrated software
Integrated Word Processing and Spreadsheet worksheets (which includes report from Activity E-14)
Printer

Description of Activity

Students should retrieve only the first quarter, section for January to March, of the spreadsheet from Activity E-14, saved as "PROGRAM 12," or rekey; retrieve the letter "Document A" from Activity G-1; and follow instructions given for Activity G-2.

Suggested Length of Activity

A 50-minute class period (or two 50-minute class periods if students must rekey the spreadsheet)

Suggestions for Teacher

The teacher may use other published material to reinforce this activity.

Suggestions for Evaluation

This activity may be graded based on production rate of merging "Document A" with the various spreadsheet quarters. However, the teacher could use additional published materials for grading purposes. Grade the activity as you would other production work.

Name__________________________

ACTIVITY G-2: INTEGRATING WORD PROCESSING AND SPREADSHEETS

DIRECTIONS:

1. Retrieve only the first quarter, January-to-March section, of the spreadsheet saved as "PROGRAM 12" or rekey.
2. Save the first quarter spreadsheet information as "Spreadsheet 1."
3. Print "Spreadsheet 1."
4. Retrieve the letter "Document A" from Activity G-1. DELETE the enclosure notation in the closing lines. Code the commands which will allow the merging of 2 documents. Place the codes before the last paragraph of the letter. Refer to the software manual for the coding or ask your teacher for assistance.
5. Save as "Document A-A."
6. Print "Document A-A."
7. Now both documents are in the computer's memory.
8. Go back to the Main Menu to create a new document entitled "P/L Letter."
9. Merge the first quarter, section for January to March, of the spreadsheet, "PROGRAM 12," with "Document A-A."
10. Save as "P/L Letter."
11. Print a copy of the merged letter and spreadsheet.
12. As time permits, merge the second-, third- and/or fourth-quarter statements with "Document A-A," save each separately under names, i.e., "P/L Letter 2," "P/L Letter 3," etc., and print out each letter.
13. Hand in a copy of "Document A," "Document A-A," "PROGRAM 12," and each merged letter with spreadsheet, "P/L Letter," along with the data disk(s)

Name ______________________

ACTIVITY G-2: INTEGRATING WORD PROCESSING AND SPREADSHEETS (Continued)

SPREADSHEET FROM ACTIVITY E-14

THE STOREFRONT
MONTH BY MONTH REPORT OF 19--

	JANUARY	FEBRUARY	MARCH
REVENUE:			
SALES	21000	24500	22250
LESS: RETURNS	500	880	900
NET SALES			
EXPENSES:			
ADVERTISING	900	1250	1400
ENTERTAINMENT	757	800	300
SALARY	4750	7000	4000
UTILITIES	3000	3700	2300
INSURANCE	800	800	800
MISCELLANEOUS	765	600	400
TOTAL			
NET INCOME			

(fix titles to key other months)	APRIL	MAY	JUNE
	21000	24500	22500
	500	0	400
	900	1250	1200
	575	700	800
	4750	3400	3400
	3400	2300	3200
	800	800	800
	757	900	400

Name______________________

ACTIVITY G-2: INTEGRATING WORD PROCESSING AND SPREADSHEETS (Continued)

THE STOREFRONT
MONTH BY MONTH REPORT OF 19--

JULY	AUGUST	SEPTEMBER
25000	34000	35000
600	1000	950
800	1250	1300
575	400	750
4570	5600	6200
3300	3500	3500
800	800	800
675	870	755

OCTOBER	NOVEMBER	DECEMBER
33000	32000	32500
500	500	0
1100	900	950
675	675	1000
4800	4900	5000
3400	3400	3500
800	800	800
750	800	500

Activity Name: Integrating Word Processing, Spreadsheet and Data Base G-3
Unit Objective 3

Suggested Use of Activity

This activity can only be completed AFTER G-1 and G-2 have been completed. It can be used to reinforce all previous units.

Objectives of Activity

Students will be able to merge a form letter, spreadsheet and data base.

Facilities or Materials Needed

Computer with monitor
1 or 2 disk drives
Word processing software
Spreadsheet software
Data base software or integrated software
Data disk(s) from Activity G-1
Data disk(s) from Activity G-2
Integrating Word Processing, Spreadsheet and Data Base worksheet
Printer

Description of Activity

Students will retrieve "address file" from Activity G-1, "P/L letter" from Activity G-2 and follow directions given in Activity G-3.

Suggested Length of Activity

A 50-minute class period

Suggestions for Teacher

The teacher could use the other merged quarterly letters for reinforcement. Other published material could also be used.

Suggestions for Evaluation

The other merged quarterly letters or additional published materials could be used for grading. Grade as you would other production work.

Name___________________________

ACTIVITY G-3: INTEGRATING WORD PROCESSING, SPREADSHEET AND DATA BASE

DIRECTIONS:

1. Retrieve "P/L Letter."
2. In the salutation DELETE "Stockholder."
3. Four lines below the date, code to merge the data base, "Address File," for the letter address.
4. Code after Dear (space) the necessary commands to merge the title, first, and last names from the data base, "Address File."
5. Save as "M P/L Letter."
6. Print a copy of "M P/L Letter."
7. Merge the data base, "Address File," and "M P/L Letter" and print out for each data base entry.
8. As time permits, code the other P/L Letters from Activity G-2 which were for other quarters, merge with the "Address File," save and print out.
9. Hand in all merged letters and data disks to your teacher.

UNIT H: GRAPHICS APPLICATIONS

UNIT PLAN

Introduction

Another computer software application that is becoming more prominent in business is computer graphics. Typically students who attempt a graphics application should first be familiar with the operation of the computer for basic spreadsheet applications so that they can better understand how data are originated.

Initially, the emphasis should be on using simple data sets created (line, bar and pie graphs). Familiarity with word processing will permit students to have less difficulty keying in the data required in a graphics application. This unit of instruction can be expanded by the teacher to include more complex applications.

Topical Outline of Unit

GRAPHICS APPLICATIONS

1. *Understanding the Computer Graphics
2. *Learning Graphics, the Parts of a Graph
3. *Creating, Editing and Printing a Line Graph
4. Creating, Editing and Printing a Bar Graph
5. Creating, Editing and Printing a Pie Graph

Unit Objectives

Upon completion of this unit, students will be able to

1. Recognize different types of graphs used in business applications.
2. Identify the parts of a line, bar or pie graph.
3. Create, edit and print a line graph using a computer graphics software package.
4. Create, edit and print a bar graph using a computer graphics software package.
5. Create, edit and print a pie graph using a computer graphics software package.

SUGGESTED STUDENT ACTIVITIES

Activity Name: Understanding Computer Graphics H-1
Unit Objective 1

Suggested Use of Activity

This activity is designed to acquaint students with the term "computer graphics" and basic types of graphs and charts used in writing business information. The teacher needs to emphasize the importance of using graphs to enhance written *and* oral reports. The types of information that can be graphed easily should be discussed.

Objectives of Activity

Upon completion of this activity, students will be able to recognize different types of graphs used in business applications.

Facilities or Materials Needed

Business magazines
Chalkboard or overhead
Post-it notes

Description of Activity

Class discussion will enhance this activity. The teacher should have a supply of business magazines available so that each student can go through the assigned magazine and put post-it notes on each page that shows a graph. If possible, each student should write down on the post-it note what type of graph it is (line, bar, pie, other). The class discussion of graphs could be based on some of the following questions:

Discussion Questions

1. What is a graph?
2. How is a graph used to show particular kinds of information?
3. What kind of data are typically found on a bar graph?
4. What kind of data are typically found on a pie graph?
5. What kind of data are typically found on a line graph?
6. What other types of graphs may be used in publications?
7. Which of the charts or graphs you found were included in articles? or in ads?
8. Why are computer graphics software packages used in business?

Suggested Length of Activity

A 50-minute class period

Suggestions for Teacher

At the end of the class discussion, the teacher could compile the class data from the magazine search on the board, similar to this:

Type of Graph	Number
Line	xx
Bar	xx
Pie	xx
Other	xx

A simple graph could be developed showing the class how accumulated data can be converted to a graph. The focus should be on the importance of graphing information.

Suggestions for Evaluation

This activity is meant to enhance class discussion, not be a graded activity. An important aspect of any class discussion is to involve all students. The development of a graph accumulating all class data should accomplish this.

Activity Name: Identifying the Parts of a Graph H-2
Unit Objective 2

Suggested Use of Activity

Once students are familiar with the purpose of computer graphics, it is appropriate to look at the specific parts of a graph and to label the parts with the correct terms. This is especially important before the student actually does the first hands-on computer application.

Objectives of Activity

Upon completion of this activity, students will be able to identify the parts of a line, bar or pie graph.

Facilities or Materials Needed

Sample graph with parts correctly labeled (Figure 1)
Graph Exercises 1 through 5 with sample graphs

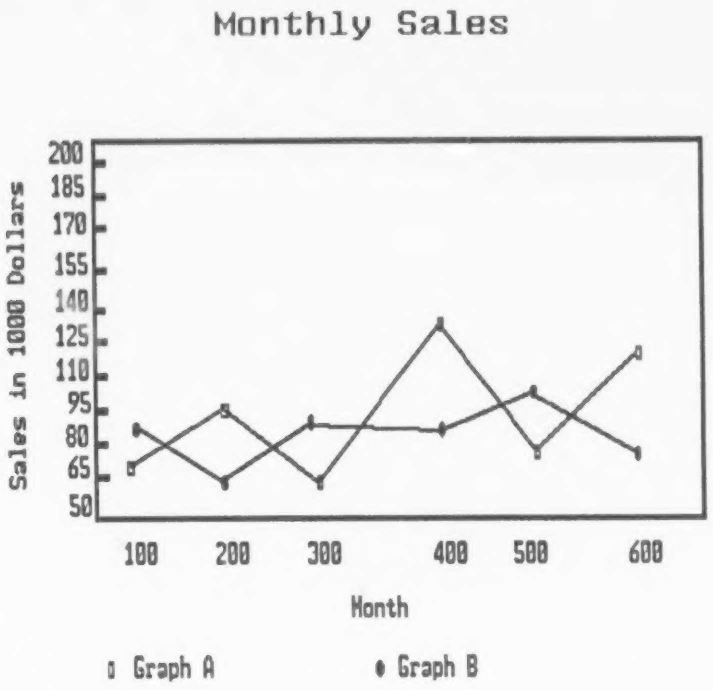
Description of Activity

First, the teacher needs to review with students the sample graph, emphasizing the placement of these parts on the graph:

TITLE--The name of the graph, descriptive name usually appearing at the center top of the graph.
SUB-TITLE--Additional descriptive information concerning the graph, usually appearing immediately below the title of the graph.
X-AXIS--A reference line always shown along the bottom of the graph as a horizontal line. Units of time are normally represented on the X-Axis.
Y-AXIS--A reference line always shown as the vertical line on the graph, measuring values or amounts.
GRAPHIC LEGENDS--Labels that represent a specific range of values.
X-AXIS LABEL--The name assigned to the information on the X-Axis.
Y-AXIS LABEL--The name assigned to the information on the Y-Axis.
Y-AXIS SCALE RANGE--The low-to-high values shown for the Y-Axis which may be modified, depending on the range of values represented.

The students should then look at Exercises 1 through 5 and identify the parts that are missing on each sample graph.

FIGURE 1



Suggested Length of Activity

A 50-minute class period

Suggestions for Teacher

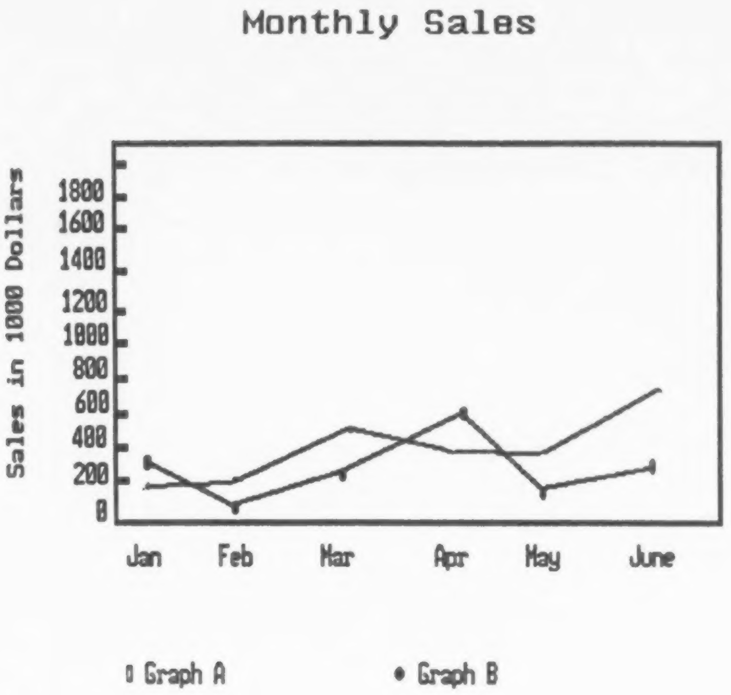
The teacher could emphasize the importance of accurate keying of information so that all labels are spelled correctly. This is an appropriate time to emphasize the need to make as few errors in keying as possible so that valuable time is not lost in unnecessary revisions.

Suggestions for Evaluation

This activity is best used as an ungraded activity. However, the student could be asked for a similar identification of graph parts as part of a unit test.

Name______________________________

ACTIVITY H-2: GRAPH EXERCISE 1



Missing Parts:

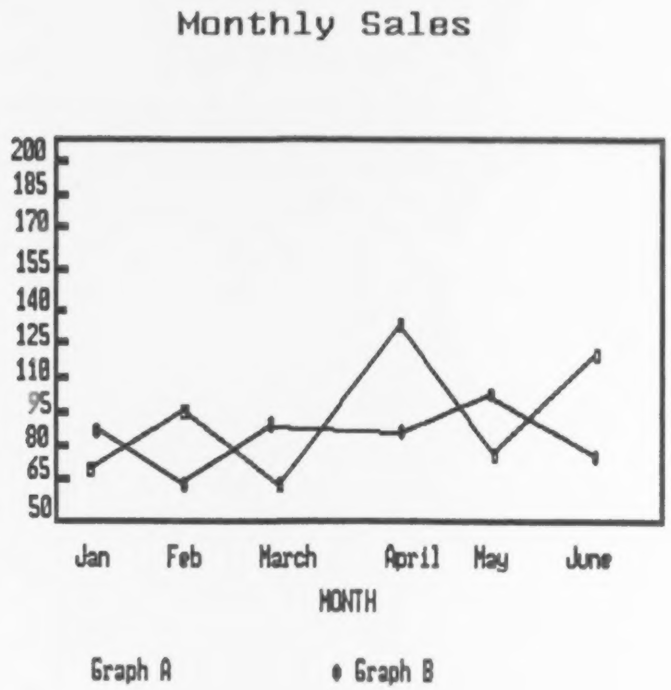
1.

2.

3.

Name____________________________

ACTIVITY H-2: GRAPH EXERCISE 2



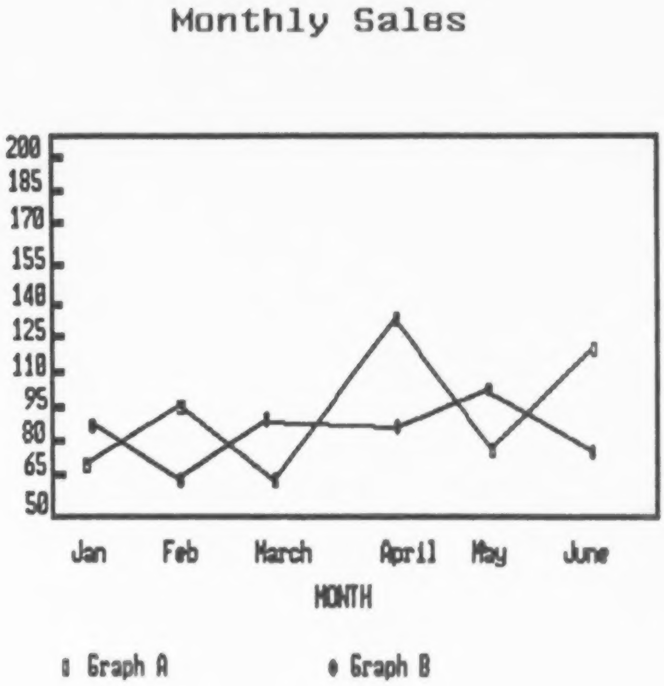
Missing Parts:

1.

2.

Name____________________________

ACTIVITY H-2: GRAPH EXERCISE 3

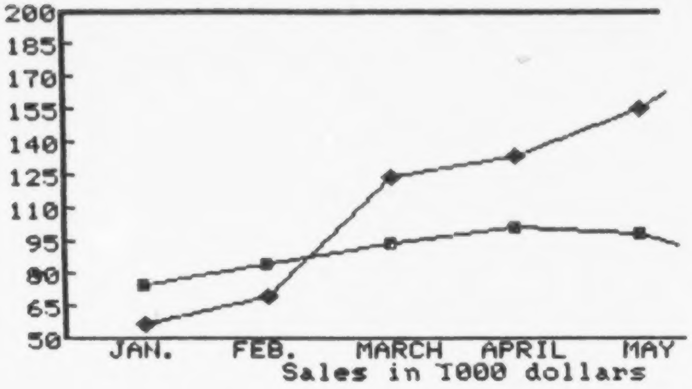


Missing Parts:

1.

Name______________________________

ACTIVITY H-2: GRAPH EXERCISE 4



Missing Parts:

1.

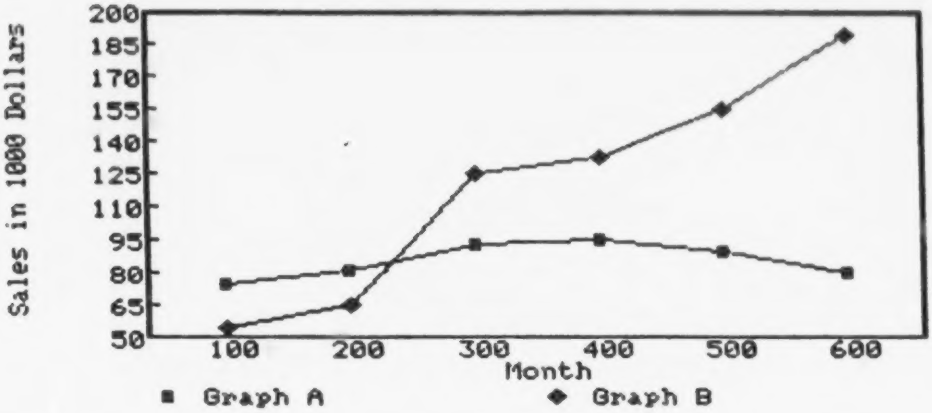
2.

3.

4.

Name______________________________

ACTIVITY H-2: GRAPH EXERCISE 5



Missing Parts:

1.

Activity Name: Create, Edit and Print a Line Graph H-3
Unit Objective 3

Suggested Use of Activity

This activity requires the student to use a computer graphics software package compatible with the classroom computers in order to produce a simple line graph. It would be preferable at this point for the teacher to guide students through each step of the process. If there is one computer for each student, students could perform each step as the teacher directs. If not, two to three students could share a computer.

Objectives of Activity

Upon completion of this activity, students will be able to create, edit and print a line graph using a computer graphics software package.

Facilities or Materials Needed

Computer with printer capable of graphics printing
Computer graphics software package compatible with computer (disks and operations/instructional manual)
Classroom lab with one computer per student preferable; or enough computers so students can work in two's or three's
Preparing a Line Graph handout

Description of Activity

Students must first be introduced to the computer and the computer graphics software package to be used. Students should be given Preparing a Line Graph handout which has the steps to be followed in completing this activity. The teacher will need to supplement these steps with additional steps required by the computer graphics software package.

Suggested Length of Activity

A 50-minute or two 50-minute class periods

The teacher should emphasize the ways in which a line graph is used with business information.

It is especially important to emphasize to students the importance of keying in accurate data so that editing will be at a minimum. The importance of keying in both alphabetical information (titles and labels) as well as numeric data (quantities, amounts, dollars/cents) can be stressed during classroom discussion before the activity begins.

Suggestions for Evaluation

This activity may be graded or ungraded. If the activity is graded, the teacher could focus mostly on the accuracy of keying in information. A possible scale might be:

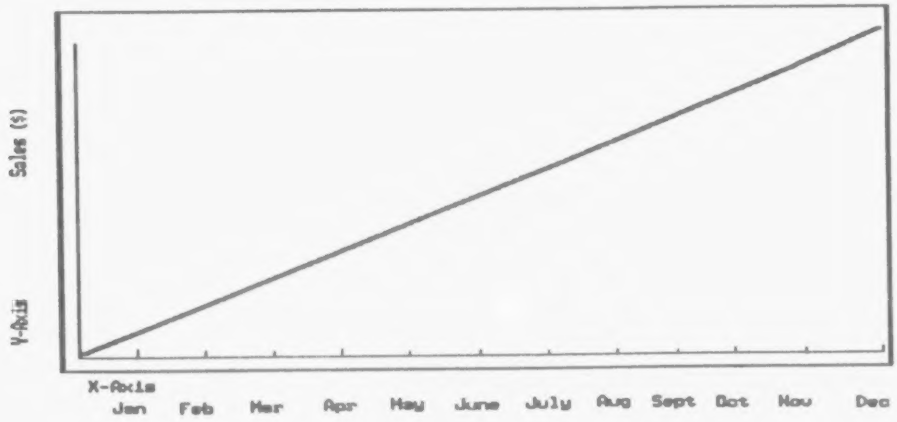
0 data errors	A
1-2 data errors	B
3 data errors	C
4 data errors	D
5 data errors	F

If this activity is not graded, the teacher could ask the students to develop a bar graph utilizing their own data set to be used as a graded activity. This would require at least one additional class period.

Name______________________

ACTIVITY SHEET H-3: PREPARING A LINE GRAPH

Sample Line Graph



Data for Line Graph

X-Data	Y-Data
Year	Attendance
1980	50,517
1981	148,784
1982	120,355
1983	243,504
1984	290,558
1985	175,433
1986	325,410
1987	275,854

Title: MAY-SEPTEMBER ATTENDANCE

Sub-title: Sandy Creek Outdoor Theater

Name________________________

ACTIVITY H-3: PREPARING A LINE GRAPH
(Continued)

Steps:

1. Load the program.
2. Enter data:
   a. Enter the X-Data
   b. Enter the Y-Data (graph data)
3. Define the graph:
   a. Enter the type of graph, in this instance line graph
   b. Enter the graph title
   c. Enter the X-axis title
   d. Enter the Y-axis title
4. Display the graph on the screen.
5. If necessary, edit data at this point.
6. Save the data on your work disk.
   Note: Some computer graphics software packages may permit you to save the data and the graph separately.
7. Print a copy of the data and a copy of the line graph, using normal print size.
8. If your printer is capable of printing a graph in expanded size, print one copy of the line graph in expanded size.

Activity Name: Create, Edit and Print a Bar Graph H-4
Unit Objective 4

Suggested Use of Activity

This activity requires students to use a computer graphics software package compatible with the classroom computers. A simple bar graph will be prepared. It would be preferable at this point for the teacher to guide the students through each step of the process. If there is one computer for each student, students could perform each step as the teacher directs. If not, two to three students could share a computer and take turns.

Objectives of Activity

Upon completion of this activity, students will be able to create, edit and print a bar graph using a computer graphics software package.

Facilities or Materials Needed

Computer with printer capable of graphics printing
Computer graphics software package compatible with computer (disks and operations/instructional manual)
Classroom lab with one computer per student preferable; or enough computers so students can work in two's or three's
Preparing a Bar Graph handout

Description of Activity

Students need to be familiar with the operation of the classroom computer and the computer graphics software package before attempting this activity. Students should be given Preparing a Bar Graph handout which outlines the steps to be followed in preparing a bar graph. The teacher will need to supplement these steps with additional steps required by the computer graphics software package used.

Suggested Length of Activity

A 50-minute or two 50-minute class periods

Suggestions for Teacher

The teacher should emphasize the difference between a line graph and a bar graph and the types of information/data typically displayed on each.

It is especially important to emphasize to the students the importance of keying in accurate data so that editing will be at a minimum. The importance of keying in both alphabetical information (titles and labels) as well as numeric data (quantities, amounts, dollars/cents) can be stressed during classroom discussion before the activity begins.

Suggestions for Evaluation

This activity may be graded or ungraded. If the activity is graded, the teacher could focus mostly on the accuracy of keying in information. A possible scale might be:

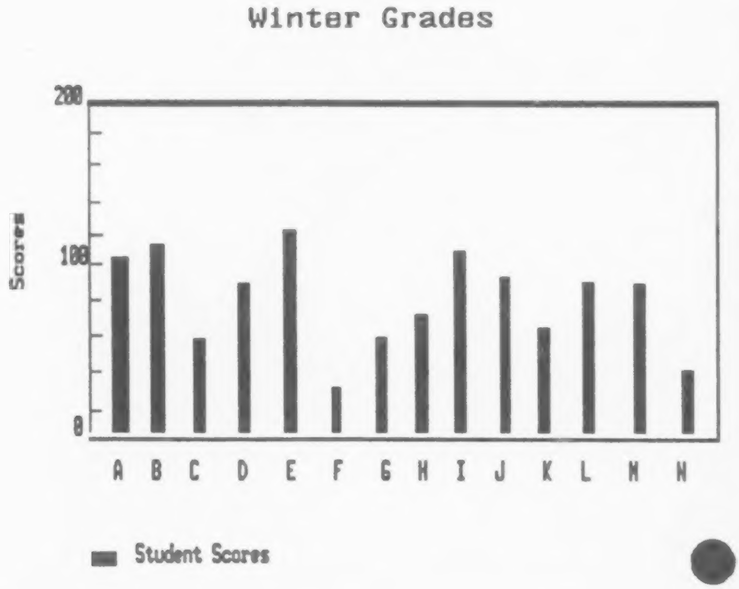
0 data errors	A
1-2 data errors	B
3 data errors	C
4 data errors	D
5 data errors	F

If this activity is not graded, the teacher could ask the students to develop a bar graph utilizing their own data set to be used as a graded activity. This would require at least one additional class period.

Name______________________________

ACTIVITY SHEET H-4: PREPARING A BAR GRAPH

Sample Bar Graph



Data for Bar Graph

X-Data	Y-Data
Student Clubs	Quantity
French Club	110
Future Homemakers Club	225
Journalism Club	175
Spanish Club	50
Drama & Theater Club	335

Title: T-SHIRT SALES -- 1987-8

Sub-Title: Reedburg High School

Name____________________

ACTIVITY H-4: PREPARING A BAR GRAPH
(Continued)

Steps:

1. Load the program.
2. Enter data:
   a. Enter the X-Data
   b. Enter the Y-Data (graph data)
3. Define the graph:
   a. Enter the type of graph, in this instance bar graph
   b. Enter the graph title
   c. Enter the X-axis title
   d. Enter the Y-axis title
4. Display the graph on the screen.
5. If necessary, edit data at this point.
6. Save the data on your work disk.
   Note: Some computer graphics software packages may permit you to save the data and the graph separately.
7. Print a copy of the data and a copy of the bar graph using normal print size.
8. If your printer is capable of printing a graph in expanded size, print one copy of the bar graph in expanded size.

Activity Name: Create, Edit and Print a Pie Graph H-5
Unit Objective 4

Suggested Use of Activity

This activity requires the student to use a computer graphics software package that is compatible with the classroom computers. A simple pie graph or chart will be prepared. It would be preferable at this point for the teacher to guide students through each step of the process. If there is one computer for each student, students could perform each step as the teacher directs. If not, two to three students could share a computer and take turns.

Objectives of Activity

Upon completion of this activity, students will be able to create, edit and print a pie graph using a computer graphics software package.

Facilities or Materials Needed

Computer with printer capable of graphics printing
Computer graphics software package compatible with computer (disks and operations/instructional manual)
Classroom lab with one computer per student preferable; or enough computers so students can work in two's or three's
Preparing a Pie Graph handout

Description of Activity

This activity requires 24 hours of student preparation to record an hour log of activities.

Students need to be familiar with the operation of the classroom computer and the computer graphics software package before attempting this activity. Students should be given Activity H-5 which outlines the steps to be followed in preparing a pie graph or chart. The teacher will need to supplement these steps with additional steps required by the computer graphics software package used.

Suggested Length of Activity

A 50-minute or two 50-minute class periods

Suggestions for Teacher

The teacher should emphasize the difference between a line graph, a bar chart, a pie graph or chart, and the types of information/data typically displayed on each.

379

It is especially important to emphasize to the students the importance of keying in accurate data so that editing will be at a minimum. The importance of keying in both alphabetical information (titles and labels) as well as numeric data (quantities, amounts, dollars/cents) can be stressed during classroom discussion before the activity begins.

Suggestions for Evaluation

This activity may be graded or ungraded. If the activity is graded, the teacher could focus mostly on the accuracy of keying in information. A possible scale might be:

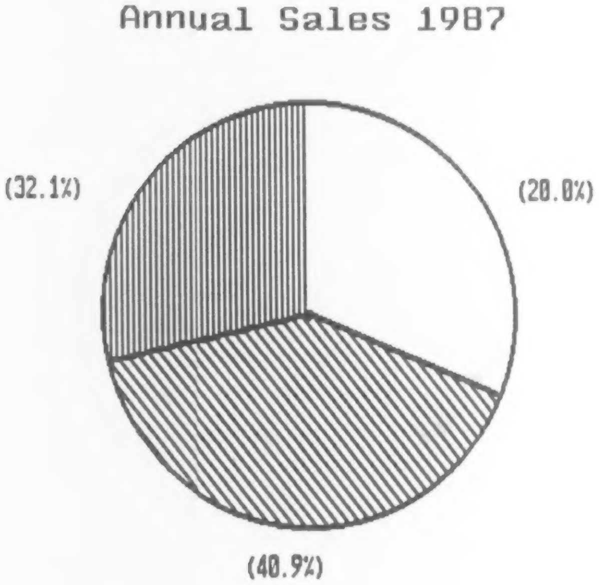
0 data errors	A
1-2 data errors	B
3 data errors	C
4 data errors	D
5 data errors	F

If this activity is not graded, the teacher could ask the students to develop a pie graph or chart utilizing their own data set to be used as a graded activity. This would require at least one additional class period.

Name___________________________

ACTIVITY SHEET H-5: PREPARING A PIE GRAPH

Sample Pie Graph



Data for Pie Graph

Your "typical" day includes a number of different activities. Prepare an analysis of the time you spend during a 24-hour period. Select one day during your Monday through Friday schedule and keep a log of the hours you spend doing particular activities like:

Eating
Sleeping
Working at job
Attending school classes
Leisure time
Watching TV
Participating in sports activities
Other

These activities will be considered the X-Data.

The number of hours spent on each type of activity will be considered the Y-Data. Round off to nearest half hour and use one decimal point.

Name___________________________

ACTIVITY H-5: PREPARING A PIE GRAPH
(Continued)

Title: TIME ANALYSIS FOR (insert your name)

Sub-Title: (insert day of week, date)

Steps:

1. Load the program.
2. Enter data:
   a. Enter the X-Data
   b. Enter the Y-Data (graph data)
3. Define the graph:
   a. Enter the type of graph, in this instance pie graph
   b. Enter the graph title
   c. Enter the X-axis title
   d. Enter the Y-axis title
4. Display the graph on the screen.
5. If necessary, edit data at this point.
6. Save the data on your work disk.
   Note: Some computer graphics software packages may permit you to save the data and the graph separately.
7. Print a copy of the data and a copy of the pie graph using normal print size.
8. If your printer is capable of printing a graph in expanded size, print one copy of the pie graph in expanded size.

UNIT I: TELECOMMUNICATIONS

UNIT PLAN

Introduction

The telecommunications unit is a required unit in the Computer Software Applications course. The activities progress from simple orientation concepts through complex applications.

Topical Outline of Unit

TELECOMMUNICATIONS

1. *Understanding Telecommunications

2. *Understanding Telecommunications Terminology

3. *Using Networking

4. Working With Bulletin boards
   a. Definition
   b. Access

5. Simulating with Telecommunications Concepts

Unit Objectives

After completion of this unit, students will be able to

1. Acquire an understanding of "Current Telecommunications Applications" by completing a one-page summary of an article from a periodical.
2. Orally discuss "Current Telecommunications Applications," giving at least one example of such an application.
3. Define 25 important terms used in telecommunications technology on a written quiz with 100 percent accuracy.
4. Discuss one method of video/teleconferencing in a one-page written report.
5. Orally discuss one method of video/teleconferencing and suggest other networking applications.
6. Simulate an electronic bulletin board by creating a data base on posterboard.
7. Successfully demonstrate the procedure for logging on and off the telephone line with 100 percent accuracy.
8. Demonstrate the procedure for requesting data from a bulletin board with 100 percent accuracy.

9. Create a new product for an imaginary company for simulation purposes.
10. Develop a written agenda for a meeting to introduce a new product from a home office to all branch offices.
11. Videotape the meeting to be shown to all branch offices.
12. Implement the use of the telephone to provide audio communication after the "transmission" of the meeting from the home office to all branch offices.
13. Compile a list of at least five advantages and five disadvantages of video/teleconferencing through oral discussion.
14. Compile a list of three suggestions to improve video/teleconferencing through oral discussion.

SUGGESTED STUDENT ACTIVITIES

Activity Name: Understanding Telecommunications I-1
Unit Objectives 1 and 2

Suggested Use of Activity

The teacher will define telecommunications and will allow students to investigate the uses of current telecommunications applications.

Objectives of Activity

Students will acquire an understanding of "Current Telecommunication Applications" by completing a one-page summary of an article from a current periodical to be submitted to the teacher and used as a basis for group discussion in the next activity.

Facilities or Materials Needed

Current periodicals (*Newsweek, Time, Business Week, U.S. News and World Report*, etc.)

Description of Activity

Telecommunication is communicating information electronically using such devices as telephone, computer, electronic mail and other types of communication devices. A majority of business organizations are using technology to make work easier and faster.

Locate several articles in current periodicals supplied by the teacher and/or library and prepare a one-page summary of an article dealing with "Current Telecommunication Applications."

Suggested Length of Activity

Two 50-minute class periods

Activity Name: Telecommunications Terminology I-2
Unit Objective 3

Suggested Use of Activity

The teacher will return the one-page reports researched in Activity I-1 "Understanding Telecommunications" and develop a list of vocabulary words with the help of the students.

Objectives of Activity

Students will be able to define 25 important terms used in telecommunications technology on a written quiz with 100 percent accuracy.

Facilities or Materials Needed

One-page reports from Activity I-1
Paper for vocabulary words and definitions
Computer-generated word-find or crossword puzzle (optional)

Description of Activity

Discussion of one-page summary reports completed in Activity I-1 by teacher and students. Students will develop a list of 25 to 35 terms and definitions which are most important in current telecommunications applications.

The teacher will construct a quiz which will consist of defining 25 terms from the list developed by teacher and students. The teacher may wish to generate a word-find or crossword puzzle on the computer to review the terms before testing takes place.

Suggested Length of Activity

One and one-half 50-minute class periods

Activity Name: Networking I-3
Unit Objectives 4 and 5

Suggested Use of Activity

The teacher will show students what a networked system would look like and will allow students to suggest possible uses for such technology, including video or teleconferencing.

Objectives of Activity

Students will prepare a one-page report discussing one of the three methods of video/teleconferencing.

Students will orally discuss a method of choice for video/teleconferencing and suggest other networking applications.

Facilities or Materials Needed

Chart or chalkboard drawing to simulate a networked system or real system where available
Current periodicals that will contain articles on networking systems
Network Report handout

Description of Activity

This activity investigates the 3 main typeS of video/teleconferencing. The teacher needs to make available periodicals which include data telecommunications for the students. The reports for this activity may be shared in small-group or in-class presentations.

Suggested Length of Activity

Two to three 50-minute class periods

Name____________________________

ACTIVITY I-3: NETWORKING REPORT

INSTRUCTIONS:

There are three main types of video/teleconferencing. The most permanent and expensive is a networked system constructed within one company's headquarters connecting it with all of its branch offices.

A second type of video/teleconferencing is an option offered by some telephone companies. This option allows companies to rent facilities to hold a meeting in one city to be linked with facilities in another city.

The third type of video/teleconference is a temporary network which will allow transmission of picture and voice in one direction only. Interaction may be provided in some cases.

Select one of these video/teleconferencing methods, research the method selected and prepare a one-page report describing the operation, equipment, cost, etc., of your choice.

Be prepared to discuss the video/teleconferencing method you chose and suggest other possible uses for this type of technology.

Activity Name: Bulletin Boards: Definition and Access I-4
Unit Objectives 6, 7 and 8

Suggested Use of Activity

This activity will simulate the use of a bulletin board on computers tied together by telephone lines for transmitting and receiving data.

Objectives of Activity

The student will be able to

1. Simulate an electronic bulletin board by creating a data base on posterboard.
2. Successfully demonstrate the procedure for logging-on and -off the telephone line with 100 percent accuracy.
3. Demonstrate the procedure for requesting data from a bulletin board with 100% accuracy.

Facilities or Materials Needed

Posterboard for bulletin boards
Two telephones (in-house lines may be used)
Bulletin Board Logging-On, -Off Procedures handout

Description of Activity

Bulletin boards are bases of data stored and transmitted electronically. Microcomputers are used to store the information, and telephone lines are used to transmit the information from one computer to another.

Each student should prepare a "bulletin board" of his/her own on a piece of posterboard supplied by the teacher. The bulletin board should be a collage of information of the student's choice. For example, lists of students in Pep Club, Band, football team, and want ads, etc.

Suggested Length of Activity

Two to three 50-minute class periods

Name____________________________

ACTIVITY I-4: BULLETIN BOARD LOGGING-ON, -OFF PROCEDURES

INSTRUCTIONS: Using the telephones, have one student call another for information from his/her bulletin board. Follow the format below to obtain information.

1. "Log-on" to phone line by dialing a telephone number. (If in-house lines are used, dial the extension number of the phone.)
2. Allow owner of bulletin board being called to identify him/herself.
3. Next, identify general subject of information sought. (Example: If you are looking for a used 1980 blue Chevrolet Chevette, the general category would be CAR or AUTOMOBILE.
4. Identify specific information sought about the subject. (Example: the word USED)
5. Continue to identify the specifics of the type of car you are looking for one word at a time. (Example: 1980, CHEVROLET, CHEVETTE, BLUE) Allow time between identifiers for the owner of the bulletin board to respond positively or negatively about whether or not his/her bulletin board contains that specific data.
6. If at any time the response is negative, you must "log-off" by saying GOOD-BYE and hanging up the phone. You may then "log-on" again and repeat the process with another student's bulletin board.
7. Once the bulletin board with the desired data is found, retrieve the data on the bulletin board.
   (Example: Who has the 1980 blue Chevrolet Chevette for sale, phone number, address, and any other data in the want ad?)
   The logging-off procedure should be followed to complete the activity.

Activity Name: Simulation with Telecommunication Concepts I-5
Unit Objectives 9, 10, 11, 12, 13 and 14

Suggested Use of Activity

The teacher will use this activity at the conclusion of the telecommunications unit. This will allow students to create a situation where telecommunication would be a feasible way to transmit information economically.

Objectives of Activity

The student will apply the information studied in the telecommunications unit in a possible job setting by

1. Creating a new product for an imaginary company.
2. Developing a written agenda for a meeting to introduce the new product from the home office to all branch offices.
3. Videotaping the meeting to be shown to all branch offices.
4. Implementing the use of the telephone to provide audio communication after the transmission of the meeting from the home office to all branch offices.
5. Compiling a list of at least five advantages and five disadvantages of this method of video/teleconferencing through oral discussion by all students in the class.
6. Compiling a list of three suggestions to improve this method of video/teleconferencing through oral discussion by all students in the class.

Facilities or Materials Needed

Videotaping equipment
Videocassette recorder for replay of videocassette
Two telephones (use of in-house lines is acceptable)
Chalkboard to list advantages, disadvantages and suggestions for improvement
Any items that may be needed by the students to produce the meeting

Description of Activity

Video/teleconferencing provides a means of telecommunicating. In some instances, it provides an alternative to sending busy executives to far-off destinations for a face-to-face meeting.

Using video equipment and telephones available in the school, plan a business meeting and tape it on the equipment. Assume that half of the students in the class are executives in the home office of a business of their choice. Prepare the agenda for a meeting to introduce a new product (as executives, the students will choose the new product) to 50 branch offices at one time. Students must decide who will do what during the meeting. The teacher must review the agenda before taping occurs and set a time limit within which to keep the actual meeting.

When all "props" are assembled and equipment is ready, the meeting should be taped. Upon completion of the tape, it should be shown to the other half of the class. At the end of the showing (transmission of video/teleconference), the viewing half of the class should use the telephones to ask questions of the "executive" half of the class and further simulate telecommunicating.

When questions have been answered, regroup all students to compile a list of advantages and disadvantages of this form of telecommunicating.

Compile a list of suggestions to improve this method of telecommunicating.

Suggested Length of Activity

Four to five 50-minute class periods

APPENDIX A

INTEGRATION OF INSTRUCTIONAL ACTIVITIES TO STATE LEARNING GOALS

Public Act 84-126, effective August 1, 1985, amended The School Code of Illinois to include, for the first time in the state's history, a definition of schooling and a requirement that the goals of learning be identified and assessed. Specifically the law requires:

- The State Board of Education must establish goals consistent with the primary purposes of schooling.
- Local school districts must establish student learning objectives which are consistent with the primary purposes of schooling and which meet or exceed goals established by the State Board.
- School districts must also establish local goals for excellence in education.
- The State Board must establish assessment procedures for local school districts.
- Local school districts must assess student learning to determine the degree to which local goals and objectives are being met.
- School districts must develop plans for improvement in those areas where local goals and objectives are not being met.
- School districts must report the learning assessment goals, assessment results, and corrective actions.
- The State Board must approve local school district objectives, assessment systems, plans for improvement, and public reporting procedures.*

The purpose of this document is to assist teachers, administrators, and State Board staff in developing curriculum which assists students in meeting the primary purposes of schooling. The six primary purposes of schooling include language arts, mathematics, social sciences, biological and physical sciences, fine arts, and physical development and health. Each of these purposes have several state goals for learning. The material which follows lists objectives for curriculum guide activities which facilitate the meeting of state goals for learning under the six primary purposes of schooling. This material can and should be used to indicate how a course utilizing these curriculum materials fits into the six primary purposes of schooling.

* Taken directly from State Goals for Learning and Sample Learning Objectives, Illinois State Board of Education, Department of School Improvement Services, Springfield, Illinois.

1. LEARNING AREA:

LANGUAGE ARTS

2. STATE GOAL FOR LEARNING 1: Students will be able to read, comprehend, interpret, evaluate, and use written materials.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Read and analyze articles concerning the development of computer technology.*	A-4
Identify common computer terminology in a word search activity.*	A-7
Locate and understand the meaning of common terms associated with computer technology.*	A-8 A-9
Read and analyze career information related to computer occupations.**	A-11
Locate want ads for computer careers found in newspapers.**	A-10
Read school catalogs and brochures to compare various computer training programs.**	A-12
Use written reference materials to understand the information processing cycle.**	A-13 A-14
Use written reference materials related to the major components of a micro processor.*	A-16
Read and analyze a case problem related to purchasing a personal computer system.**	A-18

1. LEARNING AREA:

LANGUAGE ARTS

2. STATE GOAL FOR LEARNING 2: Students will be able to listen critically and analytically.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Participate in a discussion on the value and place for computers in society.**	A-1
Interview people who have contact with computers concerning their views of computers in society.**	A-2
Discuss the ways computers assist in and detract from everyday situations.**	A-3
Listen during a discussion of the status and uses of computers.*	A-6
Listen during presentation covering the information processing cycle.*	A-14
Listen during a discussion of the major components of a microcomputer system.*	A-16
Listen during a discussion of a case problem related to the purchase of a microcomputer system.**	A-18

1. LEARNING AREA:

LANGUAGE ARTS

2. STATE GOAL FOR LEARNING 3: Students will be able to write standard English in a grammatical, well-organized and coherent manner for a variety of purposes.

3. LEARNING OBJECTIVES BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Write a short report concerning the development of computer technology and its future.**	A-4
Write a short report about the possible future implications of computer advancements.**	A-5
Write definitions for 20 common terms associated with computer technology.*	A-8
Write a report concerning computer careers and training.**	A-11
Develop a written decision and rationale for buying a particular microcomputer system.**	A-18

1. LEARNING AREA:

LANGUAGE ARTS

2. STATE GOAL FOR LEARNING 4: Students will be able to use spoken language effectively in formal and informal situations to communicate ideas and information and to ask and answer questions.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Participate in a discussion on the value and place for computers in society.**	A-1
Interview people who have contact with computers concerning their views of computers in society.**	A-2
Discuss the ways computers assist in and detract from everyday situations.**	A-3
Discuss a list of the ways computers are being used today.*	A-6
Participate in a discussion of the major components of a microcomputer system.*	A-16
Demonstrate and present information about a personal microcomputer system.**	A-17
Present decision and rationale for buying a particular microcomputer system.**	A-18

1. LEARNING AREA:

MATHEMATICS

2. STATE GOAL FOR LEARNING 6: Students will be able to understand and use methods of data collection and analysis, including tables, charts, and comparisons.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Develop bar graphs illustrating a comparison of competing computer features.**	A-19

398

1. LEARNING AREA:

SOCIAL SCIENCES

2. STATE GOAL FOR LEARNING 1: Students will be able to understand and analyze comparative political and economic systems, with an emphasis on the political and economic systems of the United States.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Understand the value and place for computers in society.**	A-1
Understand how other individuals view the use of computers in society.**	A-2
Identify four ways computers assist and hinder every-day situations.*	A-3
Understand how computers were viewed in the past and how people view the future of computers.**	A-4
Recognize how quickly computers have evolved.*	A-4
Envision how the future will be concerning the probable advancement of computers.**	A-5
Identify eight ways in which computers are being used.*	A-6
Become aware of the various careers associated with computers in the local geographical area.**	A-10
Research a computer related career.**	A-11
Compare various computer training programs at post secondary schools.**	A-12
Understand the information processing cycle.*	A-13 A-14
Identify and explain the main components/peripherals of a microcomputer.*	A-15 A-16

1. LEARNING AREA:

SOCIAL SCIENCES

2. STATE GOAL FOR LEARNING 2: Students will be able to understand and analyze events, trends, personalities and movements shaping the history of the world, the United States and Illinois.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Understand how other individuals view the use of computers in society.**	A-2
Identify four ways computers assist and hinder every-day situations.*	A-3
Understand how computers were viewed in the past and how people view the future of computers.**	A-4
Recognize how quickly computers have evolved.*	A-4
Envision how the future will be concerning the probable advancement of computers.**	A-5
Identify eight ways in which computers are being used.*	A-6
Become aware of the various careers associated with computers in the local geographical area.**	A-10
Research a computer related career.**	A-11
Compare various computer training programs at post secondary schools.**	A-12
Identify and explain the main components/peripherals of a microcomputer.*	A-15 A-16

1. LEARNING AREA:

SOCIAL SCIENCES

2. STATE GOAL FOR LEARNING 4: Students will be able to demonstrate a knowledge of world geography with emphasis on the United States.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Become aware of the various careers associated with computers in the local geographical area.**	A-10

1. LEARNING AREA:

SOCIAL SCIENCES

2. STATE GOAL FOR LEARNING 5: Students will be able to apply the skills and knowledge gained in the social sciences to decision making in life situations.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Become aware of the various careers associated with computers in the local geographical area.**	A-10
Research a computer related career.**	A-11
Compare various computer training programs at post secondary schools.**	A-12
Compare the purchase of a microcomputer from a local store and by mail order.**	A-18
Compare competing computer features.**	A-19

1. LEARNING AREA:

BIOLOGICAL AND PHYSICAL SCIENCES

2. STATE GOAL FOR LEARNING 1: Students will have a working knowledge of the concepts and basic vocabulary of biological, physical, and environmental sciences and their application to life and work in contemporary technological society.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Identify four ways computers assist and hinder every-day situations.*	A-3
Understand how computers were viewed in the past and how people view the future of computers.**	A-4
Recognize how quickly computers have evolved.*	A-4
Envision how the future will be concerning the probable advancement of computers.**	A-5
Identify eight ways computers are being used today.*	A-6
Understand terminology associated with computer technology.*	A-8 A-9
Become aware of the various careers associated with computers in the local geographical area.**	A-10
Research a computer related career.**	A-11
Compare various computer training programs.**	A-12
Understand the information processing cycle.*	A-13 A-14
Identify and explain the main components/peripherals of a microcomputer.*	A-15 A-16
Compare the purchase of a microcomputer from a local store and by mail order.**	A-18
Compare competing computer features.**	A-19

1. LEARNING AREA:

BIOLOGICAL AND PHYSICAL SCIENCES

2. STATE GOAL FOR LEARNING 2: Students will have a working knowledge of the social and environmental implications, and limitations of technological development.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Understand the value and place for computers in society.**	A-1
Understand how other individuals view the use of computers in society.**	A-2
Identify four ways computers assist and hinder every-day situations.*	A-3
Understand how computers were viewed in the past and how people view the future of computers.**	A-4
Recognize how quickly computers have evolved.*	A-4
Envision how the future will be concerning the probable advancement of computers.**	A-5
Identify eight ways computers are being used today.*	A-6
Become aware of the various careers associated with computers in the local geographical area.**	A-10
Research a computer related career.**	A-11
Compare various computer training programs.**	A-12

1. **LEARNING AREA:**

LANGUAGE ARTS

2. **STATE GOAL FOR LEARNING 1:** Students will be able to read, comprehend, interpret, evaluate, and use written materials.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Read contemporary articles concerning the use and misuse of large data bases.*	B-3
Read computer software literature to analyze features of competing brands.**	B-20
Read and analyze advertisements in computer periodicals.**	B-22

1. LEARNING AREA:

LANGUAGE ARTS

2. STATE GOAL FOR LEARNING 2: Students will be able to listen critically and analytically.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Listen during a discussion of basic data base terminology.*	B-1
Discuss the use and misuses of large data bases.**	B-3
Listen during a discussion of central processing unit terminology.*	B-5 B-6 B-8
Discuss the functions of input, output and storage devices.*	B-11
Listen during a discussion of computer hardware terminology.*	B-13 B-14
Discuss hardware functions which need to be considered prior to purchase.**	B-16
Discuss computer software terminology.*	B-17
Discuss the differences between competing brands of similar software programs.**	B-20
Listen to computer salespeople as they describe several computer systems and their store's operation.**	B-21
Contact a computer vendor to acquire information for his/her products.	B-23
Listen during guest presentation of when to use computer consulting services.*	B-24
Listen to a computer salesperson discuss computer software features during a field trip.*	B-25
Listen to a computer club member discuss the club features and benefits.*	B-26
Listen to a public domain vendor discuss public domain software.**	B-27
Participate in discussion of future trends in computer software and hardware.**	B-28

1. LEARNING AREA:
LANGUAGE ARTS

2. STATE GOAL FOR LEARNING 3: Students will be able to write standard English in a grammatical, well-organized and coherent manner for a variety of purposes.

3. LEARNING OBJECTIVES BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Develop definitions of basic data base terms.*	B-1
Write an essay concerning the societal problems which large data bases can cause.**	B-3
Develop written definitions of central processing terminology.*	B-5
Write an essay concerning the functions of a central processing unit including a diagram.**	B-7
Write an essay concerning the impact of input, output and storage devices.**	B-12
Define terms related to computer hardware terms.*	B-13
Write an essay which describes hardware features which need to be considered prior to purchase.**	B-16
Define terms related to computer software.*	B-17
Write an essay which describes the differences between two brands of the same type of software.**	B-20
Write an essay concerning a field trip to a computer store which included a computer demonstration.**	B-21
Write an analysis of information found in computer periodical advertisements.**	B-22
Contact a computer vendor by letter to acquire information for his/her products.**	B-23
Write a report about a visit to a computer store to review software features.**	B-25
Contact local computer clubs by letter and write a report about the club features and benefits.*	B-26
Write a report concerning public domain software.*	B-27

1. LEARNING AREA: LANGUAGE ARTS	
2. STATE GOAL FOR LEARNING 3: Students will be able to write standard English in a grammatical, well-organized and coherent manner for a variety of purposes.	
3. LEARNING OBJECTIVES BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Write an essay concerning the future of computer software and hardware.**	B-29
Write an essay concerning the past and future developments in computer software and hardware.**	B-30

1. LEARNING AREA:

LANGUAGE ARTS

2. STATE GOAL FOR LEARNING 4: Students will be able to use spoken language effectively in formal and informal situations to communicate ideas and information and to ask and answer questions.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Discuss definitions of basic data base terms.*	B-1
Discuss the use and misuse of large data bases.**	B-3
Discuss central processing unit terminology.*	B-5
Discuss the functions of input, output and storage devices.*	B-9
Discuss computer hardware terminology.*	B-13
Discuss hardware functions which need to be considered prior to purchase.**	B-16
Discuss computer software terminology.*	B-17
Discuss the differences between competing brands of similar software programs.**	B-20
Ask a computer vendor for information about his/her products.**	B-23
Ask questions during guest presentation of when to use computer consulting services.*	B-24
Ask a computer salesperson questions concerning computer software features during a field trip.*	B-25
Interview a public domain vendor.*	B-27
Ask computer club members about club benefits.**	B-26
Discuss future trends in computer hardware and software.**	B-28

1. LEARNING AREA:

SOCIAL SCIENCES

2. STATE GOAL FOR LEARNING 1: Students will be able to understand and analyze comparative political and economic systems, with an emphasis on the political and economic systems of the United States.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Write an essay which focuses on the impact of data bases on government agencies, businesses and health organizations.**	B-3
Understand the role of computer stores in assisting customers in the selection and use of computers.**	B-21

1. LEARNING AREA:

SOCIAL SCIENCES

2. STATE GOAL FOR LEARNING 2: Students will be able to understand and analyze events, trends, personalities and movements shaping the history of the world, the United States and Illinois.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Understand the societal problems which large data bases can cause.**	B-3
Understand the future possibilities for computer hardware and software.**	B-28 B-29
Understand differences between computers of today and the past.**	B-30
Understand terms associated with future trends in computer software and hardware.*	B-31

1. LEARNING AREA:

SOCIAL SCIENCES

2. STATE GOAL FOR LEARNING 5: Students will be able to apply the skills and knowledge gained in the social sciences to decision making in life situations.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Understand the benefits and drawbacks in contacting vendors for information about their products.**	B-23
Understand the services offered through computer hardware consulting companies.*	B-24
Understand the differences in software from information presented by a computer salesperson.**	B-25
Understand the information and activities which computer clubs offer members.*	B-26
Understand the use of public domain vendors in acquiring software.*	B-27

410

1. LEARNING AREA:

BIOLOGICAL AND PHYSICAL SCIENCES

2. STATE GOAL FOR LEARNING 1: Students will have a working knowledge of the concepts and basic vocabulary of biological, physical, and environmental sciences and their application to life and work in contemporary technological society.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Define terms related to data hierarchy.*	B-1 B-2 B-4
Define terms related to a central processing unit.*	B-5 B-6 B-8
Describe the functions of a central processing unit including a diagram.**	B-7
Define the functions of input, output and storage devices.*	B-9 B-10 B-11 B-12
Define computer hardware terms.*	B-13 B-14 B-15
Write an essay which describes hardware features which need to be considered prior to purchase.**	B-16
Define terms related to computer software.*	B-17 B-18 B-19
Write an essay describing the differences between two different brands of the same type of software.**	B-20
Discuss future trends in computer software and hardware.**	B-28 B-29
Understand terms associated with future trends in computer software and hardware.*	B-31

1. LEARNING AREA:

BIOLOGICAL AND PHYSICAL SCIENCES

2. STATE GOAL FOR LEARNING 2: Students will have a working knowledge of the social and environmental implications and limitations of technological development.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Understand the societal problems that large data bases can cause.**	B-3
Write an essay which focuses on the impact of input, output and storage devices on society.**	B-12
Discuss trends in computer hardware and software.**	B-28 B-29 B-30
Understand terms associated with future trends in computer software and hardware.*	B-31

1. LEARNING AREA:

LANGUAGE ARTS

2. STATE GOAL FOR LEARNING 1: Students will be able to read, comprehend, interpret, evaluate, and use written materials.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Identify component parts of a merged document.*	D-1
Read a software manual to find directions needed to complete word processing functions.**	D-2 D-3 D-4 D-5 D-6 D-7 D-8 D-9 D-10 D-11 D-12 D-13

1. LEARNING AREA:

LANGUAGE ARTS

2. STATE GOAL FOR LEARNING 2: Students will be able to listen critically and analytically.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Listen during a demonstration of how to turn on and load applications software into a computer.*	C-1
Listen during a demonstration of how to initialize or format a computer disk.*	C-2
Listen during demonstrations of how computers can assist in the writing process.*	D-1 D-2 D-3 D-4 D-5 D-6 D-7 D-8 D-12 D-13

1. LEARNING AREA:

LANGUAGE ARTS

2. STATE GOAL FOR LEARNING 3: Students will be able to write standard English in a grammatical, well-organized and coherent manner for a variety of purposes.

3. LEARNING OBJECTIVES BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
List the steps to turn on and load applications software and intialize and format blank disks.*	C-1 C-2
Write a short letter using a computer.*	D-2 D-3
Write a short report using a computer.*	D-4
Make corrections to writing using a variety of computer deleting functions.*	D-6
Insert new text into existing text.*	D-7
Move sections of text.*	D-8
Merge two documents into one.*	D-9
Format a short report.*	D-10
Format reports which include footers, headers, superscripts and subscripts.**	D-11
Format labels and envelopes.*	D-12
Use a spelling check program to make spelling corrections.*	D-13

1. LEARNING AREA:

BIOLOGICAL AND PHYSICAL SCIENCES

2. STATE GOAL FOR LEARNING 4: Students will have a working knowledge of the processes, techniques, methods, equipment and available technology of science.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Turn on and load applications software in a single or dual disk drive computer.*	C-1
Initialize or format a computer disk.*	C-2
Set margins, write a note and save it on a computer disk.*	D-2
Set line spacing correctly on a computer.*	D-3
Justify margins and center text using a computer.*	D-4
Use the find and replace function.*	D-5
Use various delete functions.*	D-6
Use insert functions.*	D-7
Use move functions.*	D-8
Merge documents using a computer.*	D-9
Format documents correctly using a computer.*	D-10
Format reports, including footers, headers, superscripts and subscripts using a computer.**	D-11
Format labels and envelopes using a computer.*	D-12
Use a spell check software program to make spelling corrections.*	D-13

1. LEARNING AREA:
LANGUAGE ARTS

2. STATE GOAL FOR LEARNING 1: Students will be able to read, comprehend, interpret, evaluate, and use written materials.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Read and utilize software manuals and guides to solve problems.**	E-3 E-4 E-5 E-6 E-7 E-8 E-9 E-10 E-11 E-12 E-13 E-14

1. LEARNING AREA:
LANGUAGE ARTS

2. STATE GOAL FOR LEARNING 2: Students will be able to listen critically and analytically.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Listen during a discussion/demonstration of spreadsheet software.*	E-1 E-5
Listen during a discussion/demonstration of advanced functions of a spreadsheet program.*	E-14

1. LEARNING AREA:

MATHEMATICS

2. STATE GOAL FOR LEARNING 1: Students will be able to perform the computations of addition, subtraction, multiplication, and division using whole numbers, integers, fractions, and decimals.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Use a computer spreadsheet program to complete credit billing, inventory and grade averages.**	E-2 E-3
Use a computer spreadsheet program to complete a balance sheet.**	E-7 E-8
Use spreadsheet software to reconcile a bank statement.**	E-11
Use spreadsheet software to calculate sales and income.**	E-14

1. LEARNING AREA:

MATHEMATICS

2. STATE GOAL FOR LEARNING 6: Students will be able to understand and use methods of data collection and analysis, including tables, charts, and comparisons.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Use spreadsheet software to analyze credit, inventory and grade data.**	E-2
Use spreadsheet software to reconcile a bank statement.**	E-11
Develop a graphic representation of data using spreadsheet software.**	E-12

1. LEARNING AREA:

BIOLOGICAL AND PHYSICAL SCIENCES

2. STATE GOAL FOR LEARNING 1: Students will have a working knowledge of the concepts and basic vocabulary of biological, physical, and environmental sciences and their application to life and work in a contemporary technological society.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Define the characteristics of a spreadsheet.*	E-1
Describe the hardware needed to use the spreadsheet software package.*	E-4
Identify spreadsheet prompts and moving commands.*	E-5
Identify spreadsheet labels, values and formulas.*	E-6
Understand terminology associated with spreadsheets.*	E-13

419

1. LEARNING AREA:

BIOLOGICAL AND PHYSICAL SCIENCES

2. STATE GOAL FOR LEARNING 4: Students will have a working knowledge of the processes, techniques, methods, equipment, and available technology of science.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Understand the operation of spreadsheet software.*	E-1
Use spreadsheet software to analyze credit, inventory and grade data.**	E-2
Use spreadsheet software to solve basic mathematic problems.*	E-3
Boot a computer with software programs.*	E-4
Prepare a data disk for storing data.*	E-4
Move a cursor as needed using spreadsheet software.*	E-5
Demonstrate spreadsheet commands.**	E-6 E-7
Format a spreadsheet to be used for solving business problems.**	E-9
Develop a spreadsheet that organizes four categories of information.**	E-10
Develop a spreadsheet to solve business problems.**	E-11
Develop a graphic representation of data using spreadsheet software.**	E-12
Print a spreadsheet.*	E-13
Demonstrate advanced spreadsheet functions.**	E-14

1. LEARNING AREA:

LANGUAGE ARTS

2. STATE GOAL FOR LEARNING 1: Students will be able to read, comprehend, interpret, evaluate, and use written materials.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Read software guides and other materials which describe data bases.*	F-1 F-2 F-5 F-6 F-7 F-8 F-9 F-10 F-11 F-12 F-16 F-17 F-18 F-19
Read and correct errors in a data base.**	F-15
Read letters, charts, graphs, etc., which can be merged with data base material.*	F-20

1. LEARNING AREA:

LANGUAGE ARTS

2. STATE GOAL FOR LEARNING 2: Students will be able to listen critically and analytically.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Listen during a lecture/demonstration related to data bases.*	F-1 F-2 F-3
Listen during a presentation related to data base program products found in the marketplace.*	F-4
Listen during a lecture/demonstration related to hardware needs to boot data base software.*	F-5
Listen during a lecture/demonstration of how data base software is used for business and personal use.*	F-6
Listen during a demonstration/lecture concerning formatting and entering information into a data base.*	F-7
Listen during a lecture/demonstration of how to create a new data base file.**	F-8
Participate in small group discussion of creating a business data base project.**	F-11
Listen during a discussion of the evaluation of data bases and their purposes.**	F-12
Listen during a demonstration/discussion of the scrolling functions of your software package.**	F-13
Listen during a demonstration/discussion of the steps for printing a data base.**	F-14
Listen during a demonstration/discussion of the functions that are critical to editing a data base.**	F-15
Listen during a demonstration/discussion of the functions that are critical to searching a data base.**	F-16
Listen during a demonstration/lecture related to sorting data base files.**	F-17 F-18

1. LEARNING AREA: LANGUAGE ARTS	
2. STATE GOAL FOR LEARNING 2: Students will be able to listen critically and analytically.	
3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Listen during a demonstration/lecture related to creating a format for mailing labels.**	F-19
Listen during a discussion of how data base material can be merged with text and spreadsheet data.*	F-20

1. LEARNING AREA: LANGUAGE ARTS	
2. STATE GOAL FOR LEARNING 4: Students will be able to use spoken language effectively in formal and informal situations to communicate ideas and information and to ask and answer questions.	
3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Discuss the various data base programs which are available in the marketplace.*	F-4
Discuss the evaluation of data bases and their purposes.**	F-12
Discuss the use of integrating data from data bases, spreadsheets and word processors.*	F-20

423

1. LEARNING AREA: SOCIAL SCIENCES	
2. STATE GOAL FOR LEARNING 1: Students will be able to understand and analyze comparative political and economic systems, with an emphasis on the political and economic systems of the United States.	
3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Understand how data base software can be used in business activities.*	F-6

1. LEARNING AREA: SOCIAL SCIENCES	
2. STATE GOAL FOR LEARNING 5: Students will be able to apply the skills and knowledge gained in the social sciences to decision making in life situations.	
3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Understand that data base software can be used for personal activities.*	F-6

1. LEARNING AREA:
BIOLOGICAL AND PHYSICAL SCIENCES

2. STATE GOAL FOR LEARNING 1: Students will have a working knowledge of the concepts and basic vocabulary of biological, physical, and environmental sciences and their application to life and work in a contemporary technological society.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Define terms related to data base.*	F-1 F-3
Identify alpha and numeric data.*	F-7

---

1. LEARNING AREA:
BIOLOGICAL AND PHYSICAL SCIENCES

2. STATE GOAL FOR LEARNING 2: Students will have a working knowledge of the social and environmental implications and limitations of technological development.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Evaluate the use of a data base system to record and retrieve data.**	F-12

1. LEARNING AREA:

BIOLOGICAL AND PHYSICAL SCIENCES

2. STATE GOAL FOR LEARNING 4: Students will have a working knowledge of the processes, techniques, methods, equipment and available technology of science.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Locate and identify data base concepts.*	F-2
Identify various data base software programs.*	F-4
Identify essential hardware needed to boot and use data base software.*	F-5
Correct errors which exist in a data base.*	F-7
Create a data base.**	F-8 F-10 F-11 F-16
Format a storage disk.*	F-9
Demonstrate how to save, clear and load data base information.*	F-9
Demonstrate and evaluate a data base as it relates to its stated purpose.**	F-12
Demonstrate how to use a data base.*	F-13
Print a data base.*	F-14
Edit a data base.*	F-15
Search a data base to recover data.**	F-16
Sort data base files.*	F-17
Change the order in which fields within a data base are displayed.*	F-18
Select and hide categories and insert and erase records.*	F-19
Identify integrated uses for data bases.*	F-20

1. LEARNING AREA: LANGUAGE ARTS	
2. STATE GOAL FOR LEARNING 1: Students will be able to read, comprehend, interpret, evaluate, and use written materials.	
3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Read and analyze software guides and other material to complete computer software applications**	G-1 G-2 G-3 H-3 H-4 H-5
Identify the components of various graphs.*	H-2

1. LEARNING AREA: LANGUAGE ARTS	
2. STATE GOAL FOR LEARNING 2: Students will be able to listen critically and analytically.	
3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Listen during a discussion of the various graphs which can be used to represent numeric data.*	H-1 H-2 H-3 H-4 H-5

427

1. LEARNING AREA:

LANGUAGE ARTS

2. STATE GOAL FOR LEARNING 3: Students will be able to write standard English in a grammatical, well-organized and coherent manner for a variety of purposes.

3. LEARNING OBJECTIVES BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Create, edit and print a line graph using computer graphics software.**	H-3
Create, edit and print a bar graph using computer graphics software.**	H-4
Create, edit and print a pie graph using computer graphics software.**	H-5

1. LEARNING AREA:

LANGUAGE ARTS

2. STATE GOAL FOR LEARNING 4: Students will be able to use spoken language effectively in formal and informal situations to communicate ideas and information and to ask and answer questions.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Participate in a discussion of the various graphs which can be used to represent numeric data.*	H-1

1. LEARNING AREA:

MATHEMATICS

2. STATE GOAL FOR LEARNING 6: Students will be able to understand and use methods of data collection and analysis, including tables, charts, and comparisons.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Understand the various graphs which can be used to represent numeric data.*	H-1
Identify the components of various graphs.*	H-2
Create, edit and print a line graph using computer graphics software.**	H-3
Create, edit and print a bar graph using computer graphics software.**	H-4
Create, edit and print a pie graph using computer graphics software.**	H-5

1. LEARNING AREA:

BIOLOGICAL AND PHYSICAL SCIENCES

2. STATE GOAL FOR LEARNING 1: Students will have a working knowledge of the concepts and basic vocabulary of biological, physical, and environmental sciences and their application to life and work in contemporary technological society.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Understand the various graphs which can be used to represent numeric data.*	H-1
Identify the components of various graphs.*	H-2

1. LEARNING AREA: BIOLOGICAL AND PHYSICAL SCIENCES	
2. STATE GOAL FOR LEARNING 4: Students will have a working knowledge of the processes, techniques, methods, equipment and available technology of science.	
3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Develop a letter and mailing list for merging into a form letter.*	G-1
Merge a business letter with spreadsheet data to creat a form letter.**	G-2
Merge a business letter, spreadsheet data and data base information for a form letter.**	G-3
Create, edit and print a line graph using computer graphics software.**	H-3
Create, edit and print a bar graph using computer graphics software.**	H-4
Create, edit and print a pie graph using computer graphics software.**	H-5

1. LEARNING AREA:

LANGUAGE ARTS

2. STATE GOAL FOR LEARNING 1: Students will be able to read, comprehend, interpret, evaluate, and use written materials.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Read and analyze articles dealing with current telecommunication application.*	I-1
Read and analyze articles concerning networking.*	I-3
Read and understand the procedures for logging on and off an electronic bulletin board.**	I-4
Read and analyze case situations related to telecommunications.**	I-5

1. LEARNING AREA:

LANGUAGE ARTS

2. STATE GOAL FOR LEARNING 2: Students will be able to listen critically and analytically.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Listen and analyze presentation on telecommunications.*	I-1
Participate in a discussion of current telecommunication activities.**	I-2
Listen during a discussion/presentation on networked systems.**	I-3
Listen during a discussion of electronic bulletin boards.**	I-4
Participate in an oral discussion concerning video/teleconferencing.**	I-5

1. LEARNING AREA:

LANGUAGE ARTS

2. STATE GOAL FOR LEARNING 3: Students will be able to write standard English in a grammatical, well-organized and coherent manner for a variety of purposes.

3. LEARNING OBJECTIVES BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Prepare a short summary of an article on telecommunication applications.*	I-1
Write definitions for 25-30 common terms associated with telecommunication applications.*	I-2
Write a report discussing one of the three methods of video/conferencing.**	I-3
Write and tape a business meeting simulation, using teleconferencing equipment.**	I-5

1. LEARNING AREA:

LANGUAGE ARTS

2. STATE GOAL FOR LEARNING 4: Students will be able to use spoken language effectively in formal and informal situations to communicate ideas and information and to ask and answer questions.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Participate in a discussion of current telecommunication activities.*	I-2
Participate in a discussion for networking applications.*	I-3
Participate in a discussion concerning the advantages and disadvantages of teleconferencing.**	I-5

1. LEARNING AREA:
SOCIAL SCIENCES

2. STATE GOAL FOR LEARNING 1: Students will be able to understand and analyze comparative political and economic systems, with an emphasis on the political and economic systems of the United States.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Research a video/teleconferencing type of networked system.**	I-3
Understand the role of telecommunication applications.*	I-2

1. LEARNING AREA:
SOCIAL SCIENCES

2. STATE GOAL FOR LEARNING 2: Students will be able to understand and analyze events, trends, personalities and movements shaping the history of the world, the United States and Illinois.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Understand uses of telecommunications in our society.*	I-1
Understand the role of telecommunication applications.*	I-2

1. LEARNING AREA:

BIOLOGICAL AND PHYSICAL SCIENCES

2. STATE GOAL FOR LEARNING 1: Students will have a working knowledge of the concepts and basic vocabulary of biological, physical, and environmental sciences and their application to life and work in contemporary technological society.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Understand terminology associate with telecommunications.*	I-2
Understand the networking system.*	I-3

1. LEARNING AREA:

BIOLOGICAL AND PHYSICAL SCIENCES

2. STATE GOAL FOR LEARNING 2: Students will have a working knowledge of the social and environmental implications and limitations of technological development.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Become aware of current telecommunication technology and applications.*	I-1

1. LEARNING AREA:
BIOLOGICAL AND PHYSICAL SCIENCES

2. STATE GOAL FOR LEARNING 4: Students will have a working knowledge of the processes, techniques, methods, equipment and available technology of science.

3. LEARNING OBJECTIVES: BY THE END OF GRADE 8* AND/OR 11** STUDENTS WILL BE ABLE TO:	4. LEARNING ACTIVITY REFERENCE: UNIT AND ACTIVITY #
Demonstrate how to use an electronic bulletin board.**	I-4

435

APPENDIX B

CROSSWALK OF INSTRUCTIONAL ACTIVITIES TO GENERALIZABLE SKILLS, TRANSITION SKILLS, VOCATIONAL ETHICS SKILLS AND STATE LEARNING GOALS

The Illinois education reform legislation passed in 1985 and amended in 1986 defined the primary purpose of schooling as a "transmission of knowledge and culture through which children learn in areas necessary to their continuing development, including use of alternative educational delivery systems such as opportunities for employment."*

School districts and the State Board of Education have the opportunity to work together to achieve this purpose through the implementation of the Learning Goals/Assessment Program. The program is designed so that schools will have plans in place for assessing, reporting on and improving the performance of students in grades 3, 6, 8 and 11 in relation to six selected areas of learning (Language Arts, Mathematics, Biological and Physical Science, Social Sciences, Physical Development and Health, and Fine Arts. A set of State Goals for Learning for these fundamental areas is available from the State Board of Education.

A major responsibility for the local school districts regarding this activity is to develop and submit for approval a Learning Assessment Plan (LAP) under the State Goals in each of the six fundamental areas of learning. Local districts are to show how their district curriculum is consistent with the State Goals by listing district learning objectives under the State Goals for Learning in the Learning Assessment Plan.

The purpose of this appendix is to assist teachers, administrators and State Board staff in developing curricula which assist students in meeting the primary purposes of schooling. Three classes of skills (generalizable, transition and vocational ethics) are considered very important in the development of orientation level curricula and teaching strategy. The following material provides a crosswalk of instructional activities to these skills. The material is intended to be used to indicate how a course using this curriculum material contributes to the six primary purposes of schooling.

---

* Taken from Illinois Association of School Boards (1988). The School Code of Illinois and Related Law. St. Paul: West Publishing Co. Section 27-1. p. 212.

436

ACTIVITY NUMBER	GENERALIZABLE SKILLS	TRANSITION SKILLS	VOCATIONAL ETHICS SKILLS	STATE LEARNING GOALS
A-1	R,C,I,A,T	C	E,I	LA: 2,4 MA: SS: 1 BP: 2
A-2	R,C,I,A,T	C	E,I	LA: 2,4 MA: SS: 1,2 BP: 2
A-3	R,C,I,A,T	C	E,I	LA: 2,4 MA: SS: 1,2 BP: 1,2
A-4	R,C,T	C		LA: 1,3 MA: SS: 1,2 BP: 1,2
A-5	R,C,A,T	C		LA: 3 MA: SS: 1,2 BP: 1,2
A-6	R			LA: 2,4 MA: SS: 1,2 BP: 1,2
A-7	R,C,T			LA: 1 MA: SS: BP:
A-8	R,C,T			LA: 1,3 MA: SS: BP: 1

KEY: GENERALIZABLE SKILLS
R = Reasoning
C = Communications
M = Math
I = Interaction
A = Attitudinal
T = Technology

TRANSITION SKILLS
C = Change in work
S = Dealing with stress
P = Problem solving

VOCATIONAL ETHICS SKILLS
E = Ethical reasoning
I = Interpersonal

STATE LEARNING GOAL AREAS
LA = Language Arts; MA = Math; SS = Social Science; BP = Biological & Physical Sciences; PH = Physical Development & Health

ACTIVITY NUMBER	GENERALIZABLE SKILLS	TRANSITION SKILLS	VOCATIONAL ETHICS SKILLS	STATE LEARNING GOALS
A-9	R,C,T	C,P		LA: 1 MA: SS: BP: 1
A-10	R,C,T	C,P		LA: 1 MA: SS: 4,5 BP: 1,2
A-11	R,C,T	C		LA: 1,3 MA: SS: 1,2,5 BP: 1,2
A-12	R,C,T	C		LA: 1 MA: SS: 1,2,5 BP: 1,2
A-13	R,C,T			LA: 1 MA: SS: 1 BP: 1
A-14	R,C,T			LA: 1,2 MA: SS: 1 BP: 1
A-15	R,C,T			LA: MA: SS: 1,2 BP: 1
A-16	R,C,T			LA: 1,2,4 MA: SS: 1,2 BP: 1
A-17	R,C,T			LA: 4 MA: SS: BP:

ACTIVITY NUMBER	GENERALIZABLE SKILLS	TRANSITION SKILLS	VOCATIONAL ETHICS SKILLS	STATE LEARNING GOALS
A-18	R,C,T	P		LA: 1,2,3,4 MA: SS: 5 BP: 1
A-19	C,M			LA: MA: 6 SS: BP: 1

ACTIVITY NUMBER	GENERALIZABLE SKILLS	TRANSITION SKILLS	VOCATIONAL ETHICS SKILLS	STATE LEARNING GOALS
B-1	R,C,T	C		LA: 2,3,4 MA: SS: BP: 1
B-2	R,T			LA: MA: SS: BP: 1
B-3	R,C,I,A,T	C	E,I	LA: 1,2,3,4 MA: SS: 1,2 BP: 2
B-4	R,T			LA: MA: SS: BP: 1
B-5	R,C,T	C		LA: 2,3,4 MA: SS: BP: 1
B-6	R,T			LA: 2 MA: SS: BP: 1
B-7	R,C,T			LA: 3 MA: SS: BP: 1
B-8	R,T			LA: 2 MA: SS: BP: 1
B-9	R,C,T			LA: 4 MA: SS: BP: 1
B-10	R,T			LA: MA: SS: BP: 1

ACTIVITY NUMBER	GENERALIZABLE SKILLS	TRANSITION SKILLS	VOCATIONAL ETHICS SKILLS	STATE LEARNING GOALS
B-11	R,T			LA: 2 MA: SS: BP: 1
B-12	R,C,T	C	E	LA: 3 MA: SS: BP: 1,2
B-13	R,C,T			LA: 2,3,4 MA: SS: BP: 1
B-14	R,T			LA: 2 MA: SS: BP: 1
B-15	R,T			LA: MA: SS: BP: 1
B-16	R,C,I,T	P		LA: 2,3,4 MA: SS: BP: 1
B-17	R,C,T			LA: 2,3,4 MA: SS: BP: 1
B-18	R,T			LA: MA: SS: BP: 1
B-19	R,T	P		LA: MA: SS: BP: 1
B-20	R,C,I,T	P	I	LA: 1,2,3,4 MA: SS: BP: 1

ACTIVITY NUMBER	GENERALIZABLE SKILLS	TRANSITION SKILLS	VOCATIONAL ETHICS SKILLS	STATE LEARNING GOALS
B-21	R,C,I,T	P	I	LA: 2,3 MA: SS: 1 BP:
B-22	R,C,T			LA: 1,3 MA: SS: BP:
B-23	R,C,I,T	P		LA: 3,4 MA: SS: 5 BP:
B-24	R,C,I,T	C	I	LA: 2,4 MA: SS: 5 BP:
B-25	R,C,I,T	P	I	LA: 2,3 MA: SS: 5 BP:
B-26	R,C,I,T		I	LA: 2,3,4 MA: SS: 5 BP:
B-27	R,C,I,T		I	LA: 2,3,4 MA: SS: 5 BP:
B-28	R,C,I,T		I	LA: 2,4 MA: SS: 2 BP: 2
B-29	R,C,T			LA: 3 MA: SS: 2 BP: 2
B-30	R,C,T			LA: 3 MA: SS: 2 BP: 2

ACTIVITY NUMBER	GENERALIZABLE SKILLS	TRANSITION SKILLS	VOCATIONAL ETHICS SKILLS	STATE LEARNING GOALS
B-31	R,T			LA: MA: SS: 2 BP: 1,2

ACTIVITY NUMBER	GENERALIZABLE SKILLS	TRANSITION SKILLS	VOCATIONAL ETHICS SKILLS	STATE LEARNING GOALS
C-1	R,C,T	C		LA: 2,3 MA: SS: BP: 4
C-2	R,C,T	C		LA: 2,3 MA: SS: BP: 4
D-1	R,C,T	C		LA: 1,2 MA: SS: BP:
D-2	R,C,T	C		LA: 1,2,3 MA: SS: BP: 4
D-3	R,C,T	C		LA: 1,2,3 MA: SS: BP: 4
D-4	R,C,T	C		LA: 1,2,3 MA: SS: BP: 4
D-5	R,C,T	C		LA: 1,2 MA: SS: BP: 4
D-6	R,C,T			LA: 1,2,3 MA: SS: BP: 4
D-7	R,C,T	C		LA: 1,2,3 MA: SS: BP: 4
D-8	R,C,T	C		LA: 1,2,3 MA: SS: BP: 4

ACTIVITY NUMBER	GENERALIZABLE SKILLS	TRANSITION SKILLS	VOCATIONAL ETHICS SKILLS	STATE LEARNING GOALS
D-9	R,C,T	C,P		LA: 1,3 MA: SS: BP: 4
D-10	R,C,T	C		LA: 1,3 MA: SS: BP: 4
D-11	R,C,T	C		LA: 1,3 MA: SS: BP: 4
D-12	R,C,T	C		LA: 1,2,3 MA: SS: BP: 4
D-13	R,C,T	C		LA: 1,2,3 MA: SS: BP: 4

ACTIVITY NUMBER	GENERALIZABLE SKILLS	TRANSITION SKILLS	VOCATIONAL ETHICS SKILLS	STATE LEARNING GOALS
E-1	R,C,T	C		LA: 2 MA: SS: BP: 1,4
E-2	R,C,M,T	C		LA: MA: 1,6 SS: BP: 4
E-3	R,C,M,T	C		LA: 1 MA: 1 SS: BP: 4
E-4	R,T	C		LA: 1 MA: SS: BP: 1,4
E-5	R,C,T	C		LA: 1,2 MA: SS: BP: 1,4
E-6	R,C,T	C		LA: 1 MA: SS: BP: 1,4
E-7	R,C,T	C		LA: 1 MA: 1 SS: BP: 4
E-8	R,C,T	C		LA: 1 MA: 1 SS: BP: 4
E-9	R,C,T	C,P		LA: 1 MA: SS: BP: 4
E-10	R,C,T	C,P		LA: 1 MA: SS: BP: 4

ACTIVITY NUMBER	GENERALIZABLE SKILLS	TRANSITION SKILLS	VOCATIONAL ETHICS SKILLS	STATE LEARNING GOALS
E-11	R,C,M,T	C,P		LA: 1 MA: 1,6 SS: BP: 4
E-12	R,C,M,T	C,P		LA: 1 MA: 6 SS: BP: 4
E-13	R,C,T	C		LA: 1 MA: SS: BP: 1,4
E-14	R,C,T	C		LA: 1,2 MA: 1 SS: BP: 4

117

ACTIVITY NUMBER	GENERALIZABLE SKILLS	TRANSITION SKILLS	VOCATIONAL ETHICS SKILLS	STATE LEARNING GOALS
F-1	R,C,T	C		LA: 1,2 MA: SS: BP: 1
F-2	R,C,T	C		LA: 1,2 MA: SS: BP: 4
F-3	R,C,T	C		LA: 2 MA: SS: BP: 1
F-4	R,C,T	C		LA: 2,4 MA: SS: BP: 4
F-5	R,C,T	C		LA: 1,2 MA: SS: BP: 4
F-6	R,C,T	C		LA: 1,2 MA: SS: 1,5 BP:
F-7	R,C,T	C,P		LA: 1,2 MA: SS: BP: 1,4
F-8	R,C,T	C,P		LA: 1,2 MA: SS: BP: 4
F-9	R,C,I,T	C		LA: 1 MA: SS: BP: 4
F-10	R,C,I,T	C,P		LA: 1 MA: SS: BP: 4

ACTIVITY NUMBER	GENERALIZABLE SKILLS	TRANSITION SKILLS	VOCATIONAL ETHICS SKILLS	STATE LEARNING GOALS
F-11	R,C,I,T	C,P		LA: 1,2 MA: SS: BP: 4
F-12	R,C,T	C,P		LA: 1,2,4 MA: SS: BP: 2,4
F-13	R,C,T	C		LA: 2 MA: SS: BP: 4
F-14	R,C,T	C		LA: 2 MA: SS: BP: 4
F-15	R,C,T	C,P		LA: 1,2 MA: SS: BP: 4
F-16	R,C,T	C,P		LA: 1,2 MA: SS: BP: 4
F-17	R,C,T	C,P		LA: 1,2 MA: SS: BP: 4
F-18	R,C,T	C		LA: 1,2 MA: SS: BP: 4
F-19	R,C,T	C		LA: 1,2 MA: SS: BP: 4
F-20	R,C,I,T	C		LA: 1,2,4 MA: SS: BP: 4

ACTIVITY NUMBER	GENERALIZABLE SKILLS	TRANSITION SKILLS	VOCATIONAL ETHICS SKILLS	STATE LEARNING GOALS
G-1	R,C,T	C		LA: 1 MA: SS: BP: 4
G-2	R,C,T	C,P		LA: 1 MA: SS: BP: 4
G-3	R,C,T	C,P		LA: 1 MA: SS: BP: 4
H-1	R,C,M,I	C		LA: 2,4 MA: 6 SS: BP: 1
H-2	R,C,M	C		LA: 1,2 MA: 6 SS: BP: 1
H-3	R,C,M,T	C,P		LA: 1,2,3 MA: 6 SS: BP: 4
H-4	R,C,M,T	C,P		LA: 1,2,3 MA: 6 SS: BP: 4
H-5	R,C,M,T	C,P		LA: 1,2,3 MA: 6 SS: BP: 4

ACTIVITY NUMBER	GENERALIZABLE SKILLS	TRANSITION SKILLS	VOCATIONAL ETHICS SKILLS	STATE LEARNING GOALS
I-1	R,C,I,T	C	I	LA: 1,2,3 MA: SS: 2 BP: 2
I-2	R,C,I,T	C	I	LA: 2,4 MA: SS: 1,2 BP: 1
I-3	R,C,I,T	C	I	LA: 1,2,3,4 MA: SS: 1 BP: 1
I-4	R,C,I,T	C,P	I	LA: 1,2 MA: SS: BP: 4
I-5	R,C,I,T	C,P	I	LA: 1,2,3,4 MA: SS: BP: 4